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SPORT WITH GUN AND ROD

SPORT
WITH GUN AND ROD

IN

AMERICAN WOODS AND WATERS

EDITED BY

ALFRED M. MAYER

PROFESSOR IN
THE STEVENS INSTITUTE OF TECHNOLOGY

VOLUME I

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PREFACE

THE love of the chase is deeply imbedded in man's nature. During the untold centuries of his savage condition he followed it of necessity. We now revert to our primitive employment for our pleasure and recreation, pursuing with ardor, sports which often involve much bodily fatigue and always require skill and training. An impulse, often irresistible it seems, leads man away from civilization, from its artificial pleasures and its mechanical life, to the forests, the fields, and the waters, where he may have that freedom and peace which civilization denies him. If this be not so, then why is it that the man of affairs as well as the man of leisure feels again the joy of his youth as he bids farewell to his office or his club, and seeks the solitudes of the woods and the plains? He will meet there some old familiar face in a guide, or fellow-sportsman, and welcome it with the ardor of good-fellowship. He will undergo all sorts of bodily discomforts,—coarse food and rough bed, the wet and the cold,—and yet be happy, because for a little spell he is free; in other words, he has, for the time, become a civilized savage. If, with gun and rod, he goes into the recesses of the great woods, and lives there for weeks or months, or mounts his horse and traverses the western plains and mountain passes, relying on his rifle for his subsistence, he is made to realize that there are many things to be learned outside of cities and away from his usual occupations. He will find food for philosophy in the behavior of his hunting companions he will see who is manly and unselfish, who endowed with pluck and self-reliance; for three weeks' association with a friend in the wilderness will reveal more of his real character than a dozen years' with him amid the safe retreats and soothing comforts of civilized life. He will learn how few are the real wants of a happy life in the midst of uncivilized nature. His troubles, if he carried any with him, will vanish; time will seem of as little value to him as to the savage, and like all true sportsmen and "honest anglers," he will return to his home with a calmed spirit and a contented mind.

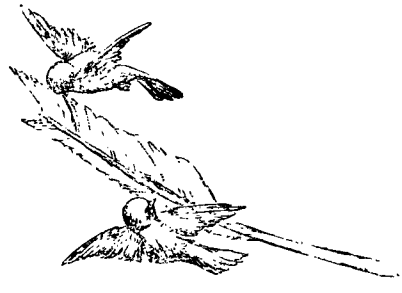
We shall have attained our object in this book, if the sportsman, as he reads it, feels his lungs expand with the cool, balsam-laden air of the woods; hears the sudden whir-r-r of the ruffed grouse on the mountain-side, and feels his nerves grow tense as he again stands over his dog and is about to flush the woodcock or snipe; hears the breakers on the rocky coast, as in imagination he makes a long "cast" into the surf; smells the salt marshes, while he hears the cries of the wild fowl and the whistle of the ducks' wings. By its perusal, also, the younger reader may be led to spend his vacations in the enjoyment of sports which are manly and health-giving, which engender self-reliance and good-fellowship, and develop a love for Nature.

My connection with this volume was unexpected. Some time ago I suggested to the editor of THE CENTURY MAGAZINE that the various articles on hunting and angling which had appeared in that periodical should be collected into a book. At the time I made this suggestion, I had no intention or desire to undertake the editing of writings describing the pursuit of game, so varied in habits and haunts that no one person could be expected to have had the requisite experience, and it was only at the solicitation of the publishers that I undertook the task. To make the work complete, several papers have been added, some of which are here printed for the first time.

In behalf of the publishers, I wish to acknowledge indebtedness to the courtesy of Kegan Paul & Co., of London, for the use of the paper on Moose-Hunting in Canada, by the Earl of Dunraven; to Houghton, Mifflin & Co., for the articles contributed by Charles Dudley Warner and John Burroughs; to Charles Scribner's Sons, for the paper on Bow-Shooting by Maurice Thompson, and to James R. Osgood & Co., for the poem by the same author.

ALFRED M. MAYER.

MAPLEWOOD.



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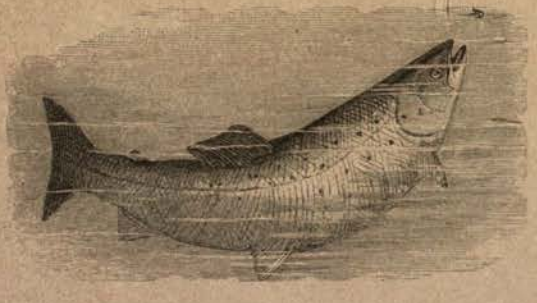

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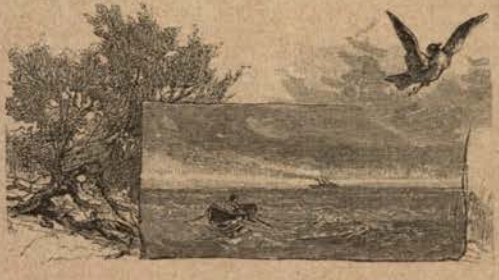

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THE PREHISTORIC HUNTER.

By ALFRED M. MAYER.

BY hunting and fishing the prehistoric man obtained his subsistence, and in these pursuits were his greatest pleasures. It may then be of interest to the modern sportsman—who, begging his pardon, is himself a good deal of a savage—to know something of this ancient brother hunter and angler, from whom he has inherited his love of sport and his savage instincts.

Thanks to the wonderful discoveries of quite recent days, we can now give the history of man as a hunter and angler from his first known appearance on earth to the present day. We first find him living in the river-valleys of Europe and of this country, his only weapons of the chase being pieces of flint rudely chipped into roughly pointed forms. Thence we track him to the caves in the banks of the rivers, where the fashion of his arms of flint and bone, and his skill in the arts of design and carving, show that he has made a notable step in his progress toward civilization. He is now a fisherman as well as a hunter. Then we see him as a dweller on the shores of the sea and the borders of the fjords, and the dog first appears as man's companion. Thence we trace him to the lakes, where he dwells in wooden houses built on piles. He wears woven fabrics as well as skins, cultivates the soil, and has herds. He fashions stone into elegantly shaped tools and weapons, with highly polished cutting edges. Later, he replaces these with bronze implements cast in stone molds. The dog now shares with man the perils and excitement of the chase and the comforts of his dwelling. The pile-dweller builds canoes or dug-outs, which he paddles over the lake, and he angles with spindles of bone and finely shaped barbed hooks of bronze suspended to lines spun of flax.

We will attempt to give mosaics of these primitive hunters and anglers, formed, it is true, out of rather large stones and of few colors; for the pictures have to be made out of what fragments this prehistoric man has left of his habitations, his feasts, his flint, bone, and bronze implements his sketches and his carvings. Sometimes, however, the arrangement of these fragments will make an almost accurate picture of him. We can clothe him in his garments, adjust his crude ornaments, place in his hands the arms of the chase, and see him as he once pursued the noble game which everywhere surrounded him.

The Hunter of the Drift.

Deep below the surface of the gravel-beds in many river-valleys in France, England, and various other parts of the world are found stone axes, spear-heads and knives of flint, rudely chipped into shape by races of men who were the first hunters of whom we have any record. The records these hunters have left are these stone implements and their own bones, which are found side by side

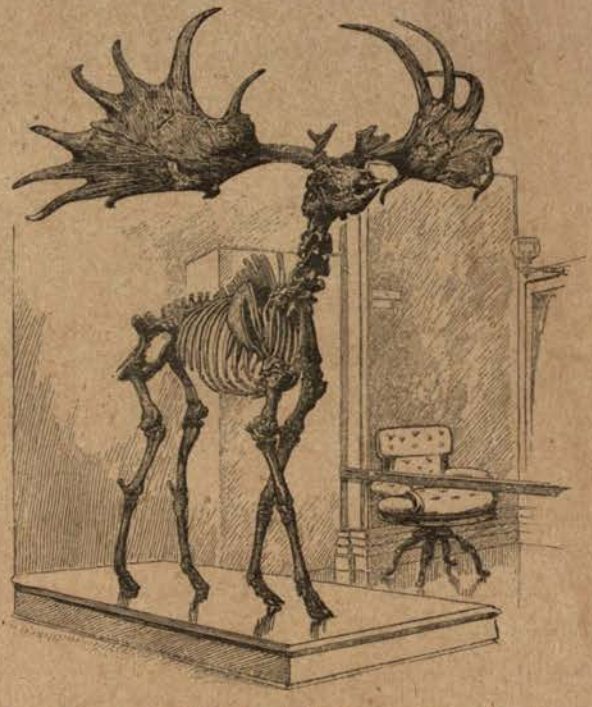
AXE OF ARCHÆOLITHIC AGE FOUND AT A DEPTH OF TEN FEET IN THE GRAVEL-BEDS OF THE DILUVIUM AT MOULIN-QUIGNON, NEAR ABBEVILLE, VALLEY OF THE SOMME— FROM THE COLLECTION OF ALFRED M. MAYER.

SPEAR-HEAD FOUND AT SAME PLACE AS AXE — FROM COLLECTION OF ALFRED M. MAYER.

with the bones of the animals they slew, and whose flesh was probably their only food.

These gravel-beds, forming what is called river-drift, are of great age. Lyell is of opinion that the chipped-flint implements and the bones found in the drift of the river Somme, in France, are at least one hundred thousand years old; while others hold that two hundred and fifty thousand years have elapsed since these ancient men hunted with their rude arms such extinct animals as the great Irish elk, the mammoth, the urus, and the cave bear. With their stone axes and flint spears they brought down the noble game, and skinned and cut it up with their flint knives.

The gigantic Irish elk, which stood ten feet in height and carried magnificent antlers which spread eleven feet from tip to tip; the urus, which disappeared in historic times, and which was described by Cæsar as "nearly equal to the elephant in bulk, but in color, shape, and kind resembling a bull"; the cave bear, longer than our grizzly; the cave lion; the hyena; a woolly-haired rhinoceros; a hippopotamus; the mammoth; the aurochs, or bison; the musk-ox; the wild horse; these were the animals hunted by these most ancient of prehistoric men. They have all passed away, except the aurochs, which the Russian Government has saved from extermination by strictly guarding them in the forests of Lithuania, and the musk-ox, which, however, now lives in the arctic regions and is seldom seen below the parallel of sixty-eight. The rest are only known to us from their bones, except the mammoth, which has



SKELETON OF THE GREAT IRISH ELK—IN THE NEW YORK MUSEUM OF NATURAL HISTORY.

been found in the flesh, imbedded in the arctic ice of Siberia, where a few have been preserved by refrigeration during untold ages.

It is not difficult to make a sketch of this ancient hunter. We see him clad in skins. He is armed with a stone axe fastened to a long handle, a long-shafted flint-tipped spear, and a sharp flint knife. Thus equipped, the hunter of the drift set out in pursuit of game which in size and numbers exceeded any now existing. We can imagine a company of these men craftily approaching a herd of aurochs, or wild horses, selecting one for their prey, and then, with the stealthy approach of the tiger, drawing near till with sudden spring they felled the animal to the ground with blows of their tomahawks or thrusts of their lances; or we see them speeding over the snow, giving chase to the huge mammoth, the wild urus, or to the swift elk, till these animals, succumbing to the superior endurance of man to fatigue and hunger, allow the hunters to surround them, and the game falls, pierced with flint lances or stunned with the blows of stone axes.

I here recall the narration of a friend of mine, an honest hunter and trapper of northern Maine. His rifle became useless when far away from his home-camp, and short of food, he came upon the tracks of a large bull-moose. On his snow-shoes he followed these tracks till night, when he slept in the hollow he scooped out

KNIFE FOUND AT SAME PLACE AS AXE AND SPEAR-HEAD — COLLECTION OF ALFRED M. MAYER.

between two fallen trees. At break of day, he was up and speeding on the snow after his game. In the afternoon, he first caught sight of the moose. He had nothing with which to attack the huge beast but a pocket-knife. With this he cut down a sapling birch and tied the knife to it in such manner that the blade could not close upon the handle. He only stopped a moment in the chase to cut down the sapling, trimming it of its branches and tying to it the knife while he was scudding over the snow. Overtaking the moose and using his extemporized lance, he gave him a severe stab in the throat. The bull at once charged him; but the hunter was prepared for this, and escaped the danger by quickly stepping behind a tree. After several repetitions of this manœuvre the moose became exhausted from loss of blood and desperation, and fell at last, a victim to the blade of a pocket-knife in the hands of a man, because he was his superior in endurance.

ARROWHEAD FROM KILLARNEY, IRELAND—COLLECTION OF ALFRED M. MAYER.

While he told his story, I pictured to myself the man of the drift armed with a similar weapon in his sharp flint spear, and chasing the great Irish elk over the crust of the snow-clad hills of Europe.

After my friend had slain the moose, he set out in search of a fellow-trapper who would help him carry the meat to camp and share it with him; but before he left the moose he turned him on his back, and with lumps of snow propped up his legs, so that if a storm should occur in his absence the

SPEAR-HEAD FOUND NEAR PONT-LEROY IN THE DILUVIUM OF THE VALLEY OF THE LOIRE — FROM THE COLLECTION OF ALFRED M. MAYER.

moose would not be lost to sight in the snow. This is a usual practice with hunters, and it is not improbable that the same plan was practiced by the cave-men; for in one of their sketches of a group of reindeer, three are on their backs. One in particular, with stiffened legs in the air, is not merely a sketch made on the surface of the piece of antler in a reversed position, a fact which is at once evident when we examine the pose of the head, neck, and legs with the drawing turned upside down.

We may reasonably suppose that yet another plan of hunting was practiced by these prehistoric men. In the chase of the mammoth or the aurochs, one of these creatures would sometimes be surrounded by the hunters and driven over the brow of a precipice, an experience which would be likely to suggest the use of pitfalls.

Flint axes, spears, and knives were the only arms of the chase used by the men of the drift, for no arrowhead, nor any kind of fishing implement or harpoon, has been found in the drift. On finding the arrowhead, we infer the use of the bow. This invention does not appear till the period of the cave-dwellers —a more recent date, yet far removed in time from ours. How man, armed only with the lance and the

ARROWHEAD FOUND NEAR PONT-LEROY — COLLECTION OF ALFRED M. MAYER.

stone tomahawk, could approach near enough to kill the swift-footed animals of the drift period, is explained by the fact that wild animals and birds do not naturally regard man as their enemy till he has taught them differently by attacking and wounding them. How often has the sportsman in the recesses of the Maine woods seen the ruffed grouse, only a few feet distant, walking leisurely across his path; while in cultivated sections of our country he is the most wary of birds, often disappointing the sportsman by springing up before him many yards beyond gun-shot. Also the squirrels, and even the deer, in regions where they have never been molested, do not exhibit that extreme fear of man which is usually attributed to them as part of their nature. It is also to be remembered that during the period of the drift, man must have been few in number compared with the game which he pursued, so that it took a long time before the animals over an extended area became aware that he was an enemy more dangerous than his size and appearance had led them at first to infer.

But as the game became aware of this fact, man had to devise weapons which could be projected from the hunter to the now more wary and more distant game, and the necessity for such weapons led to the invention of the bow and arrow, the sling, the bola, the boomerang, and the blow-gun.

Even in our own days we have seen the change in the range of fire-arms advance with the increase of wariness in the game of the West. This education of animals in the knowledge of man's killing power is also especially notable in the difficulty of now approaching the wild turkey, compared with the manner in which it could be killed during the early period of the history of this country.

The Cave-dwelling Hunter and Fisherman.

The men of the drift were succeeded by the men of the caves,—so called because they used these natural shelters as dwellings. The flint and bone implements of these men, and the relics of their feasts, are found in the caves of Germany, Switzerland, Belgium, and England; but especially notable are the caves of the valleys of the rivers Dordogne and Vézère, in France.

In the hardened beds of these caves are found flint and bone implements, and sketches and carvings on bones, which show that the men of the caves were much more advanced than the men of the drift. They hunted the same game, but it appears that the mammoth and great elk had now diminished in numbers, and that the herds of reindeer had so increased that this period in the history of prehistoric man is often called the reindeer period.

To the flint axes, spears, and knives of the drift-men, the cave-dweller had added the arrow and bow and fish-harpoons, the heads of which were skillfully and with great labor cut with flint-flakes out of the horn and bone of the reindeer. Some of these harpoons are armed with barbs along their sides; others are formed of lance-shaped pieces of bone, broad and hollow at their bases, showing that these were probably placed on the end of a shaft, and connected therewith by a long cord. On striking the fish the head of the harpoon would separate from the shaft, and the fish could be played and landed by the cord.

Mr. Phillips has shown, in his chapter on "The Primitive Fish-hook," that the cave-dwellers probably used a flint-flake, or splinter, in a manner similar to the baited needle used in these days in "sniggling" for eels and pike. A similar angling implement, made of bone, has been found among the relics of the pile-dwellers in the Swiss lakes, and our Indians of Frenchman's Bay, Maine, seem to have used a like angling tool. According to Dr. Keller ("Lake-dwellings of Switzerland and other parts of Europe"), the sniggler yet survives in Switzerland, where it is used for catching wild ducks.

The fish-bones and carvings found in the caves show that their inhabitants speared or caught the salmon, trout, pike, and carp.

Though whistles made of the foot-bone of the reindeer, with a hole in one side near the bottom of the cavity, have been found in the caves, yet they were not used as dog-calls, for the relics of the caves do not show that they had this animal as assistant in the chase and companion and protector. By blowing into one of these whistles,

PREHISTORIC CARVING IN IVORY.

a sound is produced that can be heard at a considerable distance. "How many thousands of years," says Dr. Rau, in his "Early Man in Europe," "may have elapsed since the sharp call of those whistles rallied the savage hunters when they were following the track of the reindeer or the horse!"

FISH-SPEAR, KENTS' CAVERN.

In their habits of life, the cave-dwellers resembled the Esquimos. They left the remains of their feasts around them in their caves. They could not have lived amidst such refuse except in an arctic climate; and this supposition is confirmed by the fact that the bones of the musk-ox and reindeer which are found in these caves belong to animals which now live only within or quite near the arctic circle. That a cold climate then existed is also shown from the bones of birds, whose variety also proves that they were expert fowlers. The snowy-owl,—now only found in the cold north,—the arctic willow-grouse, the ptarmigan, the capercailzie, and a species of crane, were the feathered game of these old sportsmen.

FISH-SPEARS, LA MADELAINE.

In the cave of La Madelaine, in the valley of the Vézères, has been found a bone lance-head, on which is engraved a flock of birds, presumably ducks, as they scud along the water just before rising on the wing.*

HARPOON-POINT, OF BONE AND NEPHRITE.

But this resemblance of the cave-dwellers to the Esquimos does not stop here. They are also alike in having similarly formed flint and bone implements, and in their peculiar talent for carving with flint-flakes on stone and bone.

The cave-men were clad in furs. These they cut into shape with flint knives, and made into garments by sewing them together with the sinews of reindeer, threaded on bone needles. On their hands and arms they wore long fur gloves, to protect them from the intense cold.

* See "Reliquiæ Aquitanicæ; of Christy and Lartet," p. 24, fig. 5.

Armed with their bows, and lances and arrows tipped with flint, and carrying at their sides poignards of reindeer horn, with beautifully carved handles, the men of the caves set out in pursuit of the urus, the wild horse, and the reindeer; and if such formidable beasts as the mammoth, the cave-bear, or lion came in their way, they did not hesitate to give them battle. In one of the caves have been found several incisors of the cave-bear and the lion, on which (with flint-flakes) are admirably depicted various denizens of the forest, the stream, and the sea. These teeth are perforated at their roots, and no doubt were once strung in a necklace to adorn some ancient Nimrod, mighty among those who dwelt in caves.

The bones of the larger animals, like the mammoth and woolly rhinoceros, are rare in the caves. This is easily accounted for. The hunters, after bringing down such large game, would, after the fatigue and excitement of such a great hunt, make a feast on the spot where the huge victim fell, and cutting up the carcass with their flint knives, they would carry what they could to the caves for their wives and little ones. "We can picture to ourselves," says Mr. Dawkins ("Early Man in Britain"), "the camp around the carcass, and the fires kindled not merely to cook the flesh, but to keep away the beasts of prey attracted by the scent of blood. The tribe assembled around, and the dark trunks of the oaks or Scotch firs lighted up by the blaze, with hyenas lurking in the background, are worthy of the brush of a future Rembrandt."

The Hunter and Fisherman of the Sea-shore and the Fjord.

The arctic climate in which the men of the river-drift and the cave-dwellers lived slowly gave place to a climate more like that of our own age. During this climatic change, the mammoth, the Irish elk, the great bear and cave-lion disappeared, while the reindeer, musk-ox, chamois and ibex either slowly migrated to arctic regions or moved to alpine heights where they could have the cold suited to their natures.

Man changed his habits with the change of climate. He appears now as a dweller on the shores of the sea and an inhabitant of huts built on piles driven into the bottom of lakes. Living near and on the water, he becomes an angler as well as hunter.

Along the shores of the Danish island of Zealand and the fjords of Jutland are found vast deposits of shells, the remains of feasts. Some of these shell-heaps are a thousand feet long and nearly two hundred feet in width. They are formed of the shells of the oyster, cockle, mussel, and periwinkle. Among these are found the bones of ducks, swans, and geese, of the great penguin, or auk, and of the large grouse known as the capercailzie *(Tetrao urogallus.)* "This bird, no longer found in Denmark, though still inhabiting the forests of Germany, deserves special mention. In spring it feeds chiefly on the buds of the pine, a kind of tree not growing naturally at present in Denmark, but very common during the stone age, as has been ascertained by the examination of Danish peat bogs. Thus it would seem that the disappearance of the pine from Denmark caused the capercailzie to leave that country." Bones of the sparrow are never found in these shell-heaps. (Happy people!)

The ducks, geese, and swans which these fowlers hunted they may have killed in a manner similar to that described, as follows, by Col. W. H. Gilder in "Among the Esquimos with Schwatka" ("Scribner's Monthly," vol. 22, p. 81):

"A most novel and interesting method of bird-catching is practiced during the spring and early summer, while the ducks and geese are molting and unable to fly. The Esquimo puts his *kyak*—that is, his seal-skin canoe—on his head, like an immense hat, and repairs to the big lake, or the sea-side, where he has seen the helpless birds swimming and feeding in the water. Here he launches his frail bark, and when seated, which is not always accomplished without a ducking, takes his double-bladed oar in his hands, and at once starts in pursuit of the game. Before him, on his *kyak*, where he can seize it at the proper moment, lies his duck-spear, together with other implements of the chase. Cautiously approaching the featherless flock, he sometimes gets quite near before his presence is observed; but even then, before he is within striking distance, there is a great spluttering in the water, as the band scatters in every direction, vainly beating the water with the curious looking stumps that soon will wear their plumage and once more do duty as wings. Some dive below the surface and come up a great way off, and always just where you are not looking for them; but as the flock takes alarm, the hunter dashes forward, feeling the necessity for speed rather than for caution. He is soon within fifteen or twenty feet of the struggling mass, and, seizing a curious-looking spear, with three barbs of unequal length, he poises it for a moment in the air, and then hurls it with unerring aim at the devoted bird, impaling it with a sharpened iron or bone spike in the center of the barbs. The handle of the spear is of wood, and floats on the surface of the water, so that the hunter can recover his weapon and the game at his leisure."

From the existence in these shell-heaps, or "kitchen-middens," of the bones of the cod, herring, flounder, and eel, we may infer that these fishermen had boats, made like the Esquimo *kyak*, of seal-skins; or, more probably, they used dug-outs, hollowed by the action of fire and the cuts of their stone axes and gouges. In these they ventured on the sea to take these fish. They also hunted the stag, the roe, the wild boar, urus, wolf, fox, lynx, beaver, seal, and otter, for the bones of these animals are found in the kitchen-middens, split lengthwise with flint tools, whose marks are seen on them. They thus extracted the marrow from the bones and the brain from the skulls. The bones of the hare are wanting. Perhaps, like the Laplanders of our day, they had superstitious notions concerning this animal which prevented them from slaying him.

The bones of the animals of the kitchen-middens are gnawed dog-fashion, showing that the dog now first appears as the companion of man. He was also man's victim, for his skull is often found split open so that his brain could be eaten. Let us give these people the credit of supposing that they sacrificed one of their own household only on great ceremonial occasions, as is the case with our Indians.

The Hunter and Angler of the Lakes.

Far more interesting than the remains in the kitchen-middens are the relics found at the bottom of the lakes of Switzerland, Germany, France, and Italy. During the winter of 1854, the water in the Swiss lakes sank to a very low level, and gave the dwellers along the shore the opportunity of adding to their lands by building walls along the low water-line. During these constructions at Meilen, on Lake Zurich, stone, bronze, and bone implements and fragments of pottery were brought to light. The tops of piles were also found, and this led to the discovery of the habitations of ancient men. They lived in dwellings built on piles, somewhat after the manner of savages in Venezuela and in some Polynesian and Asiatic Islands. Similar dwellings are inhabited by certain African tribes in Dahomey and in Lake Mohrya. Even in our own country there is a lacustrine village at St. Malo Pass, near Lake Borgne, Louisiana, where dwell Malay fishermen from the Philippine Islands.*

* In "Harper's Weekly," March 31, 1883.

The houses forming the villages of the European lake-dwellers were constructed of a framework of wood, interwoven with withes and encased in mud. The roofs were thatched, and a hole in the roof let out the smoke, which arose from slabs of stone on which they built their fires. Many of these houses, of rectangular and circular forms, were erected on one large platform, of two or three acres in area, supported by the piles. A narrow causeway, often two thousand yards and more in length, led from the village to the shore, thus giving them protection from hostile tribes and from the attacks of ferocious beasts.

ARROWHEAD FROM PILE-DWELLING IN LAKE BIENNE, SWITZERLAND — FROM COLLECTION OF ALFRED M. MAYER.

In some of the smaller lakes, mounds were formed of sticks, trunks of trees, stones and loam, with piles driven in their midst to give stability to this foundation. The dwellings on these mounds, with their interwoven withes and encasement of mud, must have appeared like huge beaver-houses. Probably the beaver was their first instructor in lacustrine architecture.

From the relics of these people, we can quite accurately reproduce their life. They clothed themselves in skins and fabrics woven of flax, and were armed with axes—no longer roughly chipped, but now handsomely formed and polished—mounted in sockets of elk horn, which were fastened to wooden handles. They carried bows made of yew, and arrows and spears armed with neatly shaped, sharp flints which were fastened to the shafts with asphalt and firm wrappings of the tendons of the stag. It is probable that they were dexterous in the use of the sling. They constructed dug-outs, in which they paddled over the lakes, and angled from them with their bone snigglers, and hooks made of the tusks of the wild boar for the great lake trout and the huge pike. They also fished with nets woven of flax.

During a later period in their history, bronze was introduced, and then their arms became more effective and more elegant in form, although similar to the same weapons previously made of stone and bone. The greatest advance the use of bronze produced was in their angling tools, for their hooks of bronze are nearly as perfect in

form and proportion as those used by the anglers of our own day, as is seen from an inspection of the bronze hook depicted in Mr. Phillips's chapter on "The Prehistoric Fish-hook."

While the aged men, women, and children were employed in forming weapons, canoes, agricultural tools, pottery, or in weaving cloths and nets, the men set out over the causeway,—some to lead their flocks to pasture and guard them from the wolves and bears, while others, taking to the mountains and the dells, hunted the elk, the stag, the urus, the bison, the roe-deer, the wild boar, and the brown bear; while others devoted their time to trapping the fox and the beaver. The hare they did not chase, although they were accompanied by dogs. Indeed, the dog is now first seen in the history of prehistoric man as a companion, whose friendship, intelligence, and moral qualities were so highly appreciated by these hunters that they would not partake of his flesh. The skull of the dog is found unbroken among the relics at the bottom of the lakes.

"When evening draws near, smoke begins to rise from the huts, where the women are baking and cooking, for the men who have been hunting in the woods will soon return, armed with spear and bow, and loaded with the game killed by them. Those who have spent the day in fishing guide their boats homeward; field laborers, returning from the cultivated patches along the shore, are seen to wend their way toward the bridge, driving before them the lowing cattle which were permitted to graze on the land during day-time, and are now to be stabled for the night among the huts, safe from the attacks of wolf and bear." *

Whence the lake-dwellers came, what language they spoke, and when they first built their lacustrine dwellings, are unanswered questions. We know that men lived on these pile-dwellings many centuries before the discovery of bronze. At some stations, only stone implements are found; at others, bronze and iron arms and tools overlie those of stone, showing that these places were the sites of dwellings during the many ages which must have elapsed from the neolithic, or recent stone age, through the bronze to the iron age.

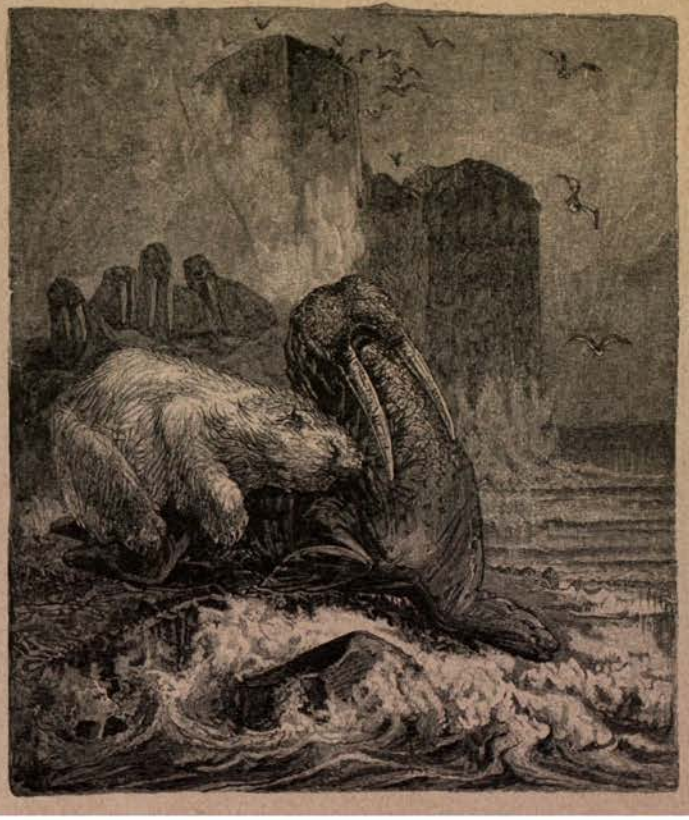
Among the coins found in the relics of the pile-dwellings at Marin is one of Claudius, which goes to show that in Switzerland the lake-

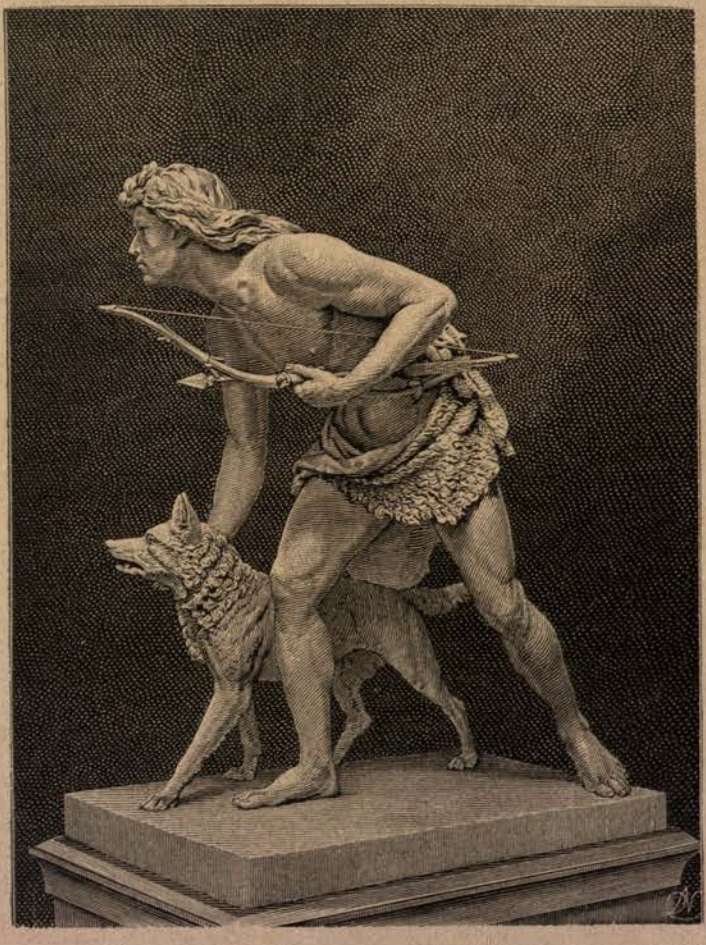
* "Early Man in Europe," by Charles Rau. A work giving, in the most interesting manner, an account of discoveries relating to prehistoric times.

dwellers were living in their lacustrine villages as late as the first century after Christ; yet neither Cæsar nor Pliny mentions these curious dwellings.

The habitations in the eastern lakes seem to belong more to the stone age, while those in the west belong both to the age of stone and of bronze.

Among these bronze implements we find axes, swords, daggers, spear and arrow heads, knives, chisels, sickles, and fish-hooks, which are as well adapted by their forms to their uses as any implements of the period of bronze. With the exception of the cross-bow, which they do not appear to have used, their arms were as effective as any which preceded the period when gunpowder introduced entirely different types of weapons.





LARGE GAME

In pastures, measureless as air,
The bison is my noble game;
The bounding elk, whose antlers tear
The branches, falls before my aim.

— Bryant.

THE BLACK BEAR.

By CHARLES C. WARD.

THE black bear *(Ursus Americanus)* derives its name from its fur, which is a rich, warm, and extremely glossy jet black, except on the muzzle, where, beginning at the mouth, the hair is a fawn color, which deepens into the dark tan color of the face, and ends in rounded spots over each eye. These color-marks and its peculiarly convex facial outline are the distinguishing marks of the species. The tan color becomes, with age, a brownish gray. The largest black bear I ever saw weighed five hundred and twenty-three pounds, and measured six feet and four inches from the tip of the nose to the root of the tail. One of this species seems to possess the power of transforming himself at will into a variety of shapes. When stretched out at length, he appears very long; when in good condition, short and stout; when upright, tall; and when asleep, he looks like a ball of glossy black fur. The black bear of to-day may be termed omnivorous, inasmuch as fish, flesh, fowl, vegetables, fruit, and insects are all eagerly devoured by him. He mates in October, and the period of gestation lasts about one hundred and twenty days. Two to four cubs form a litter. The cubs are always jet black, and not ash color, as some of the older naturalists affirm. If, according to Flourens, the natural life of an animal be five times the period of its growth to maturity, I should think that the black bear's limit was about twenty years. I knew of a cub which increased in size until his fourth year, when he appeared to have arrived at maturity.

Many country people and some experienced hunters have seen, as they believe, another species of the black bear, which they name a ranger, or racer. He is described as being a longer, taller, and

thinner animal than the black bear proper, extremely savage, and is distinguished by a white star or crescent on his breast. Marvelous tales are related of his ruthless doings, and any act of more than ordinary ferocity and daring, such as the wanton destruction of a large number of sheep, in daylight, in sight of the farm-house, is always attributed to a ranger. It is also said of him that he never hibernates, but prowls about all winter, seeking what he may devour, and keeping the farmers constantly on the alert to protect their stock. I have never had sufficient proof to warrant belief in the existence of a ranger bear, but have occasionally met with specimens of the black bear answering in some points to the above description. For instance, I have seen several black bears with white crescents on their breasts. The truth probably is that at times, during mild winters, a stray black bear may be seen prowling about, when, in accordance with all accepted ideas on the subject, he should be fast asleep. This probable fact, and the variation in size and form common to all animals, no doubt account for the popular belief in the existence of the ranger bear.

The time when the black bear selects the den in which his long winter nap is taken depends on the openness or severity of the season. In any season, he is seldom met abroad after the first of December, and he is not seen again until the first warm days of March. He does not seem particular as to the character of his den, provided it shields him from the inclemency of the weather. A retreat dug by his powerful claws under the roots of a windfall, a rocky cave on the hill-side, or a hollow log, if he can find one large enough to admit him, will serve for a winter home. When he is ready to hibernate, he is in fine condition and his fur is at its best. When he comes out in the spring, he is in a sorry condition, and is seldom molested unless he makes himself troublesome to farmers. Numerous, and curious beyond belief, have been the theories and explanations offered by naturalists to account for the suspension of the functions of nature during hibernation. An Indian whom I have found to be trustworthy has often called my attention to fir-trees which had been freshly stripped of their bark, to a distance of five or six feet from the ground, and has told me that it was the work of bears that were after the balsam, large quantities of which, according to the Indian, they eat every autumn before going into their dens.

HEAD OF BLACK BEAR (URSUS AMERICANUS).

DRAWN BY JAMES C. BEARD, AFTER A SKETCH BY CHARLES C. WARD.

It was his theory that the balsam prevented bodily waste, and that when the bears came out in the spring they dug up and ate large quantities of a root which had the effect of restoring bodily functions that had been suspended during the period of hibernation. The den is sometimes revealed by a small opening over the bear's place of concealment, where the snow has been melted by his breath. When efforts are made to dislodge him, by making a fire of boughs and moss at the entrance to his den, he will attempt to trample the fire out, and often succeeds. He has, however, a natural dread of fire, and at the first signs of a forest-fire becomes greatly alarmed, and flies to the open clearings and roadways. I once passed on horseback through a forest-fire which was burning on each side of the road, and most of the distance I was accompanied by a large black bear, that was following that avenue of escape.

It would seem improbable that the young of the black bear were liable to fall a prey to the fox and black cat, or fisher, yet such is the fact. This happens, of course, when the cubs are very young and incapable of following their dam in her search for food. The black cat is the most successful cub-slayer. The fox, notwithstanding his proverbial sagacity, is often surprised by the return of the bear, and is killed before he can escape from the den. An Indian hunter, who knew of two litters of cubs which he intended to capture as soon as they were old enough to be taken from their dam, was anticipated in one case by a black cat, and in the other by a fox. The latter paid the penalty of his adventure with his life, and was found in the den literally torn into shreds by the furious bear. The fox had killed one of the cubs, when the old bear surprised and dispatched him, and went off with the two remaining cubs. The Indian overtook and slew her and captured the cubs. Upon another occasion, he was not so fortunate. Stimulated by the large price offered by the officers of a garrison town for a pair of live cubs, he was indefatigable in his endeavors to find a den. One day, when accompanied by his little son, a boy of ten, he discovered unmistakable traces of a bear's den, near the top of a hill strewn with granite bowlders, and almost impassable from the number of fallen pines. One old pine had fallen uphill, and its upreared roots, with the soil clinging to them, formed, with a very large rock, a triangular space into which the snow had drifted to a depth of ten or twelve feet. The Indian was about to

pass on, when he detected the whining of bear-cubs. By making a *détour*, he reached a place on a level with the bottom of the bowlder, and there saw the tracks of an old bear, leading directly into the center of the space between the tree-root and the bowlder. The old bear, in her comings and goings, had tunneled a passage under the snow-drift. Getting down on his hands and knees, the Indian, with his knife held between his teeth, crept, bear fashion, into the tunnel. After entering several feet, he found the usual bear device—a path branching off in two directions. While pondering what to do under such circumstances, a warning cry came from his little son, who was perched on the top of the bowlder, and the next instant the old bear rushed into the tunnel and came into violent contact with the Indian, the shock causing the tunnel to cave in. The Indian, after dealing the bear one blow, lost his knife in the snow, and seized the bear with his hands; but she proved too strong for him, and was the first to struggle out of the drift, when, unfortunately, she met the little Indian boy, who had climbed down to his father's rescue. He received a tremendous blow on the thigh from the bear's paw as she passed, which crippled him for life. Four days afterward the Indian, determined to avenge the injury of his son by slaying the old bear, returned to the den and discovered her lying dead upon the snow in front of the bowlder: his one blow had gone home, and the poor creature had crawled back to her young to die. The Indian dug away the snow and found three cubs that were dead or dying.

The principal strongholds of the black bear at the present day are the great forests of Maine and New Brunswick. My own observation and the reports of farmers lead me to think that Bruin is growing more carnivorous and discontented with a diet of herbs. Assuredly, he is growing bolder. He is also developing a propensity to destroy more than he can eat, and it is not improbable that his posterity may cease to be frugi-carnivorous. It is fortunate that an animal of the strength and ferocity which he displays when aroused seldom attacks man. The formation of his powerful jaws and terrible canine teeth are well adapted to seize and hold his prey, and his molars are strong enough to crush the bones of an ox. His great strength, however, lies in his fore-arms and paws. His mode of attacking his prey is not to seize it with his teeth, but to strike terrific blows with his fore-paw.

SKULL OF BLACK BEAR.

Bruin's weakness is for pork, and to obtain it he will run any risk. When the farmers, after suffering severe losses at his hands, become unusually alert, he retires to the depths of the forest and solaces himself with a young moose, caribou, or deer. He seldom or never attacks a full-grown moose, but traces of desperate encounters, in which the cow-moose has battled for her offspring, are frequently met with in the woods. The average value of a bear, including the bounty, is twenty dollars. This being the case, it may appear surprising that larger numbers are not taken. But the black bear combines extreme cunning with great sagacity, and every year he seems to be getting more on his guard, and suspicious of all devices intended for his capture. Large, full-grown animals are seldom killed. A black bear skin, taken at the proper season, is not excelled by any other kind of fur. If properly dressed, it possesses great softness and a gloss peculiar to itself. The fur is highly esteemed in Europe, where it is used for sleigh and carriage robes and coat linings and trimmings. It is also in much request in England and other parts of Europe, for the shakos of certain infantry regiments and the housings and trappings of cavalry.

FORE-PAWS.

In the autumn of 1879, in the Red Rock district, Province of New Brunswick, eighteen bears were killed, only two of which had arrived at maturity; some of them were only yearlings. Only ten or twelve settlers and their families inhabit the district, and during that year seventy-three head of stock, including sheep, hogs, and horned cattle, were destroyed by bears. This district, situated on the extreme outskirts of civilization, is the bear's paradise. The houses in most cases are built of logs, and the occupants are a stalwart, simple race, whose manners and customs carry you back to the frontier life of half a century ago. They are hospitable to a degree not

HIND-PAWS.

often met with at the present day. The farms on which they live are clearings in the primeval forests. During a visit to this district, I had the luck, unexpectedly, to see Bruin at home in one of his wildest retreats. North of the settlement a range of rocky hills rises perpendicularly from the shores of a forest lake. The hills are strewn with gigantic bowlders, over which the hunter must pick his way with no little difficulty and danger. But by that expert climber, the black bear, such rugged ground is easily traversed. Our tramp had been a long one, and on our return my Indian guide proposed that we should cross the Red Rock hills, and thus save much time. Great black clouds threatened an autumn storm. After much hard climbing, we reached a place where the whole hill-side seemed riven apart. On every side we were surrounded by precipices and deep gulches, partly filled with great bowlders and sharp fragments of rocks. Although the dangers were not of Alpine magnitude, they might just as well have been, inasmuch as they were greater than we had any means of overcoming. In attempting to find a way out, we clambered along a ledge of rocks that afforded only insecure footing, and gradually diminished in width until all farther progress in that direction became impracticable. Retracing our steps, almost in despair of finding an outlet, we came to a fissure in the cliff just wide enough to admit one at a time. For a distance of twenty feet we were able to walk in an upright position; then the passage narrowed rapidly, and we had to crawl upon our hands and knees in almost perfect darkness. Presently we came to a place where the opening was so low that, if one attempted to straighten up, his back came in contact with a solid wall of rock; thence the passage took a sharp downward pitch, at the bottom of which we found a space sufficiently large to permit us to regain an upright position. The darkness was now complete, and, not daring to move for fear of getting a fall, I thought it prudent to return to the ledge, and imparted my intention to the guide. I received no reply, and called out in a louder voice. To my surprise, the answer came in a muffled tone from a locality apparently directly under me. By this time my eyes had become accustomed to the gloom, and I detected a bluish. glimmering light on the rocky wall overhead, proceeding from a distant corner of the space in which I stood. Creeping to the source of the light, I found a wedge-like opening, decreasing in

BEAR AND CUBS.

width as it descended. While debating with myself what to do next, the guide's head appeared at the bottom of the opening. He called to me to come down. Entering in a recumbent position, feet foremost, I slipped down and discovered that the passage led into another chamber-like space, with the difference that it was in open daylight, the sky being visible beyond an overhanging ledge of rocks. The rocky platform was strewn with bones, and plentifully sprinkled with porcupine quills. The information of the guide was not needed to convince me that we were in the ante-chamber of a bear's den, and that the room above was the den proper. It seems almost incredible that the black bear should permit such an offensive animal as the porcupine to occupy the same den with him, but there is good reason to believe that he sometimes does so. Although it was too early in the season for Bruin to seek permanent winter quarters, I did not feel at all certain that he might not pay occasional visits to his den, and urged the guide to get out of the place as soon as possible. As there was likely to be more than one entrance to the den, we looked about us and discovered that, by climbing over a jutting ledge of rock, we should be able to get upon a lower and

THE INDIAN.

much more extensive plateau of rock immediately under the den. We reached the platform safely, and, selecting a spot where we were sheltered and concealed by bowlders, we called a halt and lighted our pipes. A slight tap on the shoulder caused me to turn around, and, looking in the direction indicated by the guide, I saw a large bear seated on his haunches and looking intently at something. Farther away I saw another bear, crossing a chasm on an old pine-log that bridged it, and which afterward helped us out of our dilemma. Another tap on the shoulder, and another surprise in store for me; for, up the hill-side, above the den, sat another bear with his head partly turned to one side, and looking in an inquiring manner at the two bears below him. By this time the one on the log had nearly crossed over, and the one sitting on his haunches growled frightfully. We were not fifty yards from him, and he might at any moment detect our presence; fortunately, we were well to leeward of him. We had been exploring a stream connecting a string of lakes, to exam-

ine a very extensive and perfect beaver-dam, and, not expecting to hunt, had left our rifles at the camp. All I had to fight with was a solid sketch-book, while, by some strange fatality, the Indian had in our climb even lost his knife out of its sheath. I was looking

THE BEAR PASS.

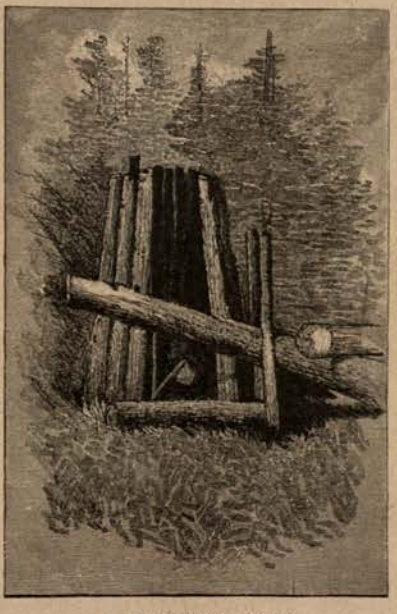
about for some way of escape, when I noticed that the bear on the hill-side had vanished, and the one that crossed over on the log had moved toward the one sitting on his haunches. They sat about ten feet apart, and made the strangest noise I ever heard. Commencing with the sniff peculiar to the bear, the noise was prolonged into a deep, guttural growl, accompanied by a peculiar champing of the jaws. At that moment, a large stone, evidently dislodged by the bear that had vanished from the hill-side, came tumbling down the ravine. It struck on the solid ledge on which we were crouching, and broke into pieces. Instinctively looking up, in apprehension that the fragment might be the advance guard of an avalanche, we lost sight of the two bears, and never saw them again. Alarmed by

AFTER HONEY.

the falling stone, they had swiftly and stealthily gone away. The guide said that the two bears which were on the ledge with us were males, and that, as it was the pairing season, the growling we were treated to was merely the preliminary of a terrible fight. During the pairing season, the males congregate in bands and scour the forest, growling, snarling, and fighting. On such occasions, all prudent hunters avoid an encounter with them. The females are savage when suckling their young, and will fight to the death in their protection. At all other seasons, both males and females avoid a meeting with human beings, but if attacked and wounded, or brought to bay, the black bear is a foe to be dreaded. Their keen scent and acute hearing enable them to detect the approach of an enemy, and to keep out of his way.

Sometimes the black bear is hunted with dogs trained for the purpose. The dogs are not taught to seize the game, but to nip his heels, yelp around him, and retard his progress until the hunters come up and dispatch him with their rifles. Common yelping curs possessed of the requisite pluck are best adapted for the purpose. Large dogs with sufficient courage to seize a bear would have but a small chance with him, for he could disable them with one blow of his powerful paw. Another way of hunting is to track Bruin to his

winter den, and either smoke or dig him out, when he may be dispatched by a blow on the head with the poll of an ax as he struggles out. Various kinds of traps, set-guns, and dead-falls are also employed against him. A very efficient means of capture is a steel trap, with double springs so powerful that a lever is necessary in setting it.



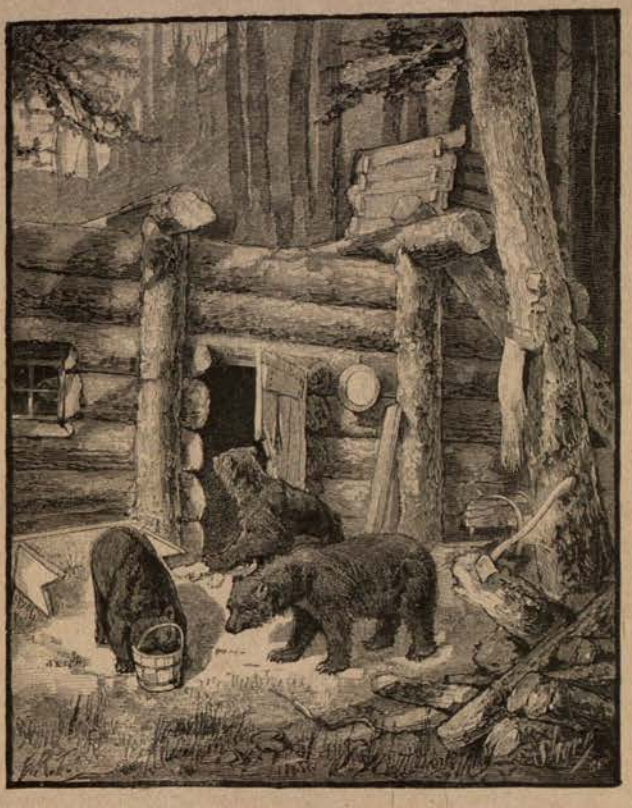
A DEAD-FALL TRAP.

The trap is placed in runs or pathways known to be frequented by bears, and concealed, care being taken not to handle the trap. A stout chain, with a grapnel or a large block of wood attached, is fastened to the trap. Even with this an old bear often manages to escape altogether, his sagacity teaching him to return and liberate the grapnel or block whenever it catches upon anything and checks him. He dies eventually, of course, if unable to free himself from the trap, but in some cases he has been known to gnaw off a part of his paw and leave it in the trap. This mode of capture is open to the charge of cruelty, as the bear is usually caught by a paw, and sometimes by the snout, and the injury not being immediately fatal, the animal may die a lingering death of great agony. The set-gun, if properly arranged, kills the bear instantly. The gun is placed in a horizontal position, about on a level with a bear's height; one end of a cord is fastened to the trigger and brought forward in such a way that when

the bait is attached to the other end of the cord it hangs over the muzzle of the gun, and the least pull on the bait discharges the gun, which is protected from the weather by a screen of bark. The ordinary dead-fall consists of a number of stout poles driven in the ground in the form of a U. In front of the opening is placed a heavy log. The bait is suspended from a string within the inclosure so that it will be necessary for the bear to place his fore legs over the log in order to reach it. The string has connection with a piece of wood which props up the dead-fall, consisting of a heavy log of beech or birch timber weighted with other logs. When the bear pulls at the bait, the prop is drawn from under the heavy timber, which falls across his back. It sometimes happens that the hunter, to his discomfort, finds that his dead-fall has proved fatal to one of his own or his neighbor's cattle.

In the autumn, bear-hunters take advantage of Bruin's known partiality for raspberries, blackberries, and blueberries, and set traps and dead-falls in the approaches to the patches. He also frequents the beech-forests, and his expertness as a climber enables him to obtain the rich mast, on which he grows corpulent. In the spring, when he first comes from his winter quarters, he feasts upon the ants and grubs he discovers by industrious digging, or by turning over decayed logs. Later in the season, when the herrings and alewives run up the streams to spawn, Bruin turns fisherman, and captures the fish by intercepting them as they pass over shallow places, and scooping them out with his paws. His taste for pork and molasses and such delicacies often encourages him to visit the camps of lumbermen, where he sometimes makes sad havoc.

If captured when very young and carefully trained, the black bear becomes tame, but I doubt if he ought to be trusted as a pet My own efforts to tame young bears have not always proved successful. It is unpleasant, on returning from a journey, to find your house surrounded by the neighbors armed with old muskets and pitchforks, the windows broken, the gardens trodden down, your family impris-



SACKING A LUMBER CAMP.

oned in the dining-room, and to be told by your man-servant, who has prudently kept outside of the house, that the pet bear, in a state of ferocity, is in possession. Nevertheless, if one is willing to endure that sort of thing, a vast amount of amusement can be got out of a tame bear.

I really think that Bruin possesses the sense of humor; at all events, his actions point that way, and there is no doubt that he is extremely cunning and observing. I once had an English friend visiting me, who played the flute. He was in the habit of marching up and down, while playing, near a tame bear I had at the time. The bear had a piece of stick about two feet long, which he tossed about for amusement. After a time, he came to handle the stick very much as my friend did his flute. This annoyed my sensitive friend, and in revenge he teased the bear with uncouth noises. Bruin sniffed and whined, and waited his opportunity for delivering a

tremendous blow with his paw at his enemy, whose tall hat was knocked completely over his eyes. He escaped being scalped by dropping flat and rolling out of the reach of the bear. This bear spent much of his time in the tree to which he was chained, and when climbing usually got his chain twisted over and under the branches in a most intricate manner, but never failed to take out every turn as he descended. A friend, who owned a tame bear, told me that, for a long time, he could not account for the mysterious way in which the poultry disappeared. Observing, at different times, a good many feathers around Bruin's pole, he began to suspect that the bear was the culprit. Close watching confirmed his suspicions. When Bruin thought he was unobserved, he would seize any unfortunate hen or chicken within his reach and devour it; but if any one approached before he could complete the meal, he would sit upon his prey until the danger of discovery had passed. He was betrayed, at last, by the cackling of an old hen that he had failed to silence.

BEAR-HUNTING IN THE SOUTH.

By JAMES GORDON.

FROM my youth, bear-hunting has been to me a fascinating sport, and, after an experience of more than thirty years in all kinds of Southern sports, during which I have seldom failed to spend a portion of the winter camp-hunting in the Mississippi bottom, I think I may venture to relate one of my bear-hunts, and give the inexperienced sportsman some idea of the characteristics of the bear.

We had pitched our tent on the banks of a beautiful sheet of water, one of the chain of lakes that drains the swamps of Tunica County, Mississippi, when the Father of Waters inundates the valleys. Through these lakes and the bayous leading from them the annual overflows are carried off into the Coldwater, Tallahatchie, and Sunflower rivers, thence into the Yazoo, and back into the Mississippi.

Besides old Hannibal, a negro servant, there were only four of us in camp. One was a professional hunter, two were cotton-planters and experienced hunters—not simply sportsmen who occasionally spent a day of recreation in quail-shooting over a brace of pointers, but hunters who had studied wood-craft until it seemed like instinct to thread their way through the wilderness by day or night, without other compass than the moss on the north side of the trees.

When a novice in wood-craft joins a party of old hunters, he is often subjected to many a practical joke; although, at the same time, old hunters are very generous in imparting information or in rescuing him from danger. On this occasion, the target of our jokes was James Rogers, a fair-haired Northerner from "old Long Island's sea-girt shore," an enthusiastic sportsman, a crack shot at pigeons, but

in our section almost as helpless as a babe,—the opposite, in every respect, of our backwoods hunter, whose pen-portrait I will endeavor to give. Living by hunting and trapping from boyhood, an uneducated frontiersman, he was the *beau ideal* of a hunter—clad in buckskin hunting-shirt and leggins, with an otter-skin cap on his head and a 'coon-skin pouch in which he carried his ammunition swung across his shoulders, and a short rifle in his hand; about five feet ten inches tall, round-bodied, but with no surplus flesh, and with muscles like corded steel. His hair was steel gray and inclined to curl where it fell below the temples. His features were regular, and by long exposure to sun, rain, and miasma were wrinkled and bronzed; but, clear and brilliant through a complexion like a tanned alligator-skin, sparkled a pair of merry blue eyes that indicated a soul as gay and free as the wild woods he loved so well. All through the swamps he was known as "Old Asa, the bear-hunter." The two planters were Major Duncan and myself.

When old Asa sounded his horn, about twenty-five dogs of all descriptions gathered around him; like their master they were trained hunters, and many bore the marks of Bruin's claws. If you should ask the pedigree of old Beargrease or Bravo, the two most noted leaders of the pack, I should be compelled to admit that the vilest mongrel strains coursed through their veins. For there is no certainty in breeding them: often the most "or'nary"-looking cur makes the best bear-dog. On my annual expeditions to the swamps, I was accustomed to buy, borrow, and "persuade" to follow, every specimen of the canine race I could pick up; and if out of a dozen I secured one who "took to bear," I was lucky.

A bear-pack requires dogs of various sizes. A few rough-haired terriers, active and plucky, that can fight close to Bruin's nose and dodge under the cane when pursued; some medium-sized dogs to fight on all sides, and a few large, active curs to pinch his hind-quarters when he charges in front or crosses an opening in the woods. Bear-dogs must fight close, but not attempt to hold a bear; you want them to hang on but not to hold fast. A well-trained pack will only seize hold at the same time when one of their number is caught; then they boldly charge to the rescue of their comrade, and as soon as he is freed, loose their holds and run. Then gathering around the bear again, they worry him until he climbs a tree, where

he falls an easy prey to the hunter. The hunter never cheers his pack unless he is in trouble and wants their assistance.

IN THE FOREST.

The bear usually makes his bed in the most impenetrable cane-brake. He cuts and piles up heaps of cane until he has a comfortable spring mattress. He is very fastidious in his taste, and will not remain in a wet bed; so, after every spell of bad weather, he changes his quarters. In diet he has a wide, almost omniverous taste. In the summer, he is very destructive to the farmer's corn-fields, showing a decided relish for green corn or roasting ears, or fat pig or mutton as a side-dish, not refusing a pumpkin by way of dessert. As the fall season approaches, he climbs after the wild grape, the succulent muscadine, the acorn, and the persimmon, and leaves his sign everywhere he travels, in heaps of hulls of pecan and scaly-bark hickory nuts. This is called the lapping season, as he ensconces himself in a tree-lap and breaks the limbs to pieces, in gathering nuts and fruits. He is also excessively fond of honey, and is utterly regardless of bee-stings while tearing to pieces a nest of wild bees from a hollow tree.

Hunters sometimes entrap him by placing in his path a vessel containing whisky made very sweet with honey. Bruin is easily intoxicated, and very human in his drunken antics. I have seen him killed by negroes while lying helpless upon his back catching at the clouds; but such slaughter is unsportsmanlike, and no true hunter would resort to it.

But old Asa and the dogs are off down the lake-side, and we follow in single file.

Here, indeed, is the hunter's paradise. Flocks of mallard, teal, and wild duck, covering acres of surface, are floating lazily upon the limpid water; on the other side, a dozen swans are gracefully gliding along. A flock of ungainly pelicans, with their huge mandibles scooping after minnows, waddle about the opposite shore. The wild goose is heard overhead, while the sentinel of the flock on the water replies. The white and blue crane, motionless as the sentinels of Pompeii, line the shore. The tall cypresses in the lake, with their fringed foliage, lift their weird knees out of the water and look lonely and desolate; while the oaks and gums upon the shore, draped in clinging vines, festooned with moss, and reflected in the lake, add to the somber picture of the wilderness. The sycamores and cottonwoods are of immense size, some being ten feet in diameter.

Old Asa turned from the lake and boldly entered a canebrake, we following. Here the foremost horse has the hardest time, for he must break the way for the rest through cane and bamboo-vines. Old Asa's horse, however, like his master, was a trained hunter, and would wait the stroke of the hunting-knife which cut the vines, to push on through the tangled mass. Going through cane, every one is required to take the cartridge from his gun; or, if he has a muzzle-loader, to take the cap from the tube.

A HUNTER'S PARADISE.

After crossing a canebrake ridge of half a mile, we entered a large, open wood, where we found a quantity of overcup acorn mast, upon which bear and deer feed during the winter months. Under the limb of a pawpaw we saw a fresh buck-scrape. This is made by the male deer, while scratching his antlers amid the branches above; he scrapes the earth with his feet, as a sign for his tawny mate. A little farther on, within easy range, we startled the antlered monarch from his lair; but not a gun was raised to arrest his flight. As the deer lifted his white flag and bounded off, the younger dogs pricked up their ears and looked anxiously forward, ready to burst forth in full cry; but a word in a harsh tone from old Asa caused

OLD ASA CUTTING THROUGH THE CANEBRAKE.

them to fall to the rear. "This is a bear-hunt, and these are bear-dogs," said Asa, and we understood that no other game must be shot before them. On rainy days, we go out from camp, singly, and "still-hunt" for deer; for then they are easily found, as they avoid the wet cane and feed in the open woods.

"Here's a b'ar sign!" exclaimed Asa, as he pointed to the foot of a large overcup acorn tree. Just then, a sound that vibrates through the hunter's heart with a thrill of pleasurable emotion fell upon our ears. Of our pack of dogs only the reliable hunters, such as Bravo and Beargrease, are allowed full liberty in ranging the woods. There was the sound again! Bravo had struck a trail! Every dog rushed forward at the well-known signal

of their leader; but the track was cold, and every nose was busy smelling among the leaves, trying to unravel its mystic windings. We rode slowly along; old Beargrease made a circle, and struck the trail farther ahead. The old dog seemed to know he had solved the problem this time, for, sitting upon his haunches, he raised his head, and uttered his prolonged cry—which was to us a note of exquisite joy. Bravo, Granger, and twenty more joined in the chorus, and slowly, but surely and steadily, they moved along on the trail. "More sign!" shouted old Asa, presently; "here's his stepping-path," and he pointed to a path made by the bear as he passed to and fro from the canebrake. Here he explained to Rogers that the path was made by a habit the bear has of always putting his feet in precisely the same tracks; this habit is often taken advantage of, and a trap is set in his path, or a gun is placed so as to kill or mortally wound him.

"And this one, I can see by his signs, is a big fat old he," added old Asa.

"Now, look here, old fellow," replied Rogers, "don't test my credulity too far. I would like to know how you can tell a fat bear from a lean bear, or a he bear from a she bear, when you have never seen it."

"Little boy," replied Asa, while a benevolent expression mocked the gay humor in his clear blue eye, "your education has been sadly neglected; book-l'arnin' may be very useful in town, but one grain of common sense is worth a bushel of college diplomas in the swamps. Now listen and l'arn wisdom; I know this is a fat b'ar, because his hind toe marks do not reach the fore ones; had he been poor, they would well-nigh have overlapped."

"But how do you know it is a he bear, and a big he besides?"

"The Lord pity your ignorance, child! don't you see whar he writ it up on that hackberry?"

"Well," replied Roger, "you will have to interpret it; I can see nothing but meaningless scratches up there on the tree; what do you make of it?"

"Look close," replied Asa, "and you will see the tallest marks are the freshest; a young b'ar, feeling very large all by himself, wrote his name thar first; the way he does it, he places his back ag'in' the tree and, turning his head, bites the bark as high as he can

BEAR HIEROGLYPHICS.

reach, which means, in b'ar lingo, 'I'm boss of the woods—beware how you trespass on my domains.' The next b'ar that comes along takes the same position and tries to outreach the first. Now, this old fellow has written in b'ar hi'roglyphics a foot higher, 'Mind your eye, young un, you're a very small potato; I'm the hoss that claims preëmption rights to these pastures.' Another reason for knowing it's a he b'ar is that the she's have young about the third week in January, and it's about that time. We hunt them in February by examining the cypress-trees, where they have left their marks climbing to their dens. The young ones, when first born, are not larger than a rat."

"I have read that the bear was a hibernating animal; how about that?" asked Rogers.

"The b'ar becomes very fat in winter," said Asa, "and his insides are so covered with fat that he has no room for food; in a cold climate he would lie up, but here he is tempted by the mild winters to keep traveling around."

While old Asa was giving our city friend this bit of natural history, the dogs were busy at work on the trail; the track was

growing warmer. Suddenly they all dashed into the cane, when, *whew!*—with a snort and crash through the cane, as if all the fiends had broken loose from Tartarus, the bear was started from his lair. With a wild yell, we all followed, pell-mell, in pursuit. For a mile or more the bear seemed to gain upon his pursuers; but, like a relentless fate, the fierce pack stuck to his heels, while the hunters were slowly cutting their way through the cane. Old Asa led the way, with that intuition which belongs to the practiced woodsman and aids him in avoiding the heaviest canebrakes.

Reaching a boggy bayou, we paused to listen for the pack. The baying of dogs underneath the heavy cane cannot be heard at a great distance; and, as we halted on our horses, we could hear no sound but the melancholy soughing of the winds through the lonely cypress. Old Asa leaped from his horse, and, telling us to keep silent, knelt and placed his ear close to the ground. For a few moments the silence was almost painful. Then springing to his feet, he exclaimed:

"All right, boys! The b'ar has turned toward camp; I heard them distinctly; they are fighting very close."

"How will we cross the bayou?" asked Rogers. "It would bog a saddle-blanket here."

"Follow me, young un," said old Asa, "and I'll l'arn you what your school-master never did—how to cross a boggy bayou."

Then proceeding up the bayou, he selected a spot where the cypress-knees were thickest, and led the way safely across; then pushing rapidly forward, flanking the canebrake and keeping to the open woods, after a detour of a mile we were again in hearing of the pack.

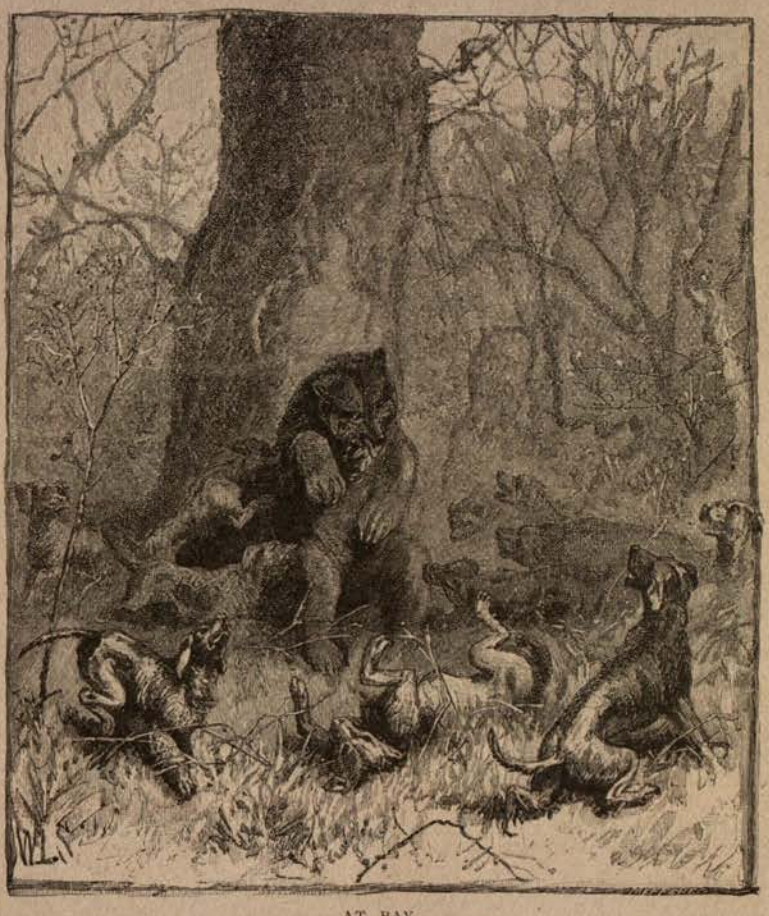
"He has turned back!" shouted old Asa. "Scatter out across the opening and some of us will get a shot!"

We promptly obeyed the order, and soon heard them coming, crashing madly through the canebrake. Presently out jumped the bear near Major Duncan's stand, with the dogs pressing him like a legion of furies. As the major attempted to shoot, his horse wheeled, and before he could turn, the bear had seen him and turned back into the cane, preferring a score of dogs to one hunter; going farther down the cane, he again burst into the opening and crossed close to Rogers, who had dismounted and was standing by

a fallen tree. As the bear leaped the log, Rogers fired. Although a bear is a large animal, yet when he is running he is not so good a target as one would think. If the reader will attempt to put a ball through the center of a barrel-head while it is in rapid motion he will have some idea of shooting at a running bear. Rogers missed, but the dogs, encouraged by the report of his gun, attacked with renewed vigor. Across the open woods, in plain view, we beheld a grand sight. As the dogs charged at the report of Rogers's gun, Rocket, a large, active fellow (a cross between a mastiff and a greyhound), seeing the way clear, made a dash, and catching one of the bear's hind feet, tripped him so adroitly that he rolled over on his back, and before he could recover was covered with dogs. But a sweep of his huge paws scattered his foes in every direction. A few leaps and he again reached the canebrake, and soon we heard the dogs at bay. We dismounted, hitched our horses, and proceeded on foot to the scene of action. But it was slow work, for the bear always seeks the heaviest canebrake for his battle-ground. We had to creep and crawl, sometimes prostrate upon the ground, under the tangled mass of cane and vines, often having to use our hunting-knives in disentangling ourselves.

Except old Asa, who carried a rifle, we were all armed with short, double-barrel shot-guns, loaded with buck and ball. This, in my judgment, is the most effective weapon for bears, as they are generally shot in a tree or on the ground at close quarters; and after the labors of a bear-chase the nerves are apt to be a little shaky for drawing a fine bead with a rifle.

Cutting our way through the mass of cane, we reached the outer circle of dogs and beheld the bear sitting with his back against the trunk of a tree, his fore paws just touching the toes of his hind ones as they projected up in front of him. Thus, with his rear protected, he stood at bay, occasionally making a rush for a dog who had ventured too near, and when he had scattered his foes, returning to his position, pressed again in turn by the dogs he had pursued. It was a splendid picture—the huge beast, shaggy and grim, with the white froth dripping from his red lips and lolling tongue, beset on every side, fighting a host, relying alone upon the strength of his mighty arm to keep his foes at bay. At length, greatly worried, he resolved to do what a large, fat bear greatly dislikes, viz., take a tree.



AT BAY.

Making a rush, as a feint to scatter his enemies, he sprang up into an oak and seated himself in a fork about twenty feet from the ground.

By this time my companions had arrived, and it was agreed that Rogers, who had never killed a bear, should have the shot. He took his position in front of the tree and attempted to get a sight at the bear's head; but a bear's head is a bad target, as it is in constant motion, and the frontal bones are so sharp and hard that, unless the hunter makes a center shot, the ball will glance and do but little harm; moreover, when wounded, however slightly, the bear is almost sure to abandon the tree. At the report of Rogers's gun, though slightly stunned by the glancing ball, Bruin threw his arms around the tree on the opposite side, and came down, as old Asa said, "like a streak of greased lightning." The pack covered him as he touched

THE DEATH.

the earth. Major Duncan rushed to the rescue of the dogs, who are almost sure to get hurt if a bear is wounded; but the dogs were so thick the major could not shoot. I saw Bravo caught in Bruin's arms, and saw the major push a couple of dogs aside and fire, but he only succeeded in knocking the brute down and releasing the old dog. At the same moment, a stroke of Bruin's paw sent the major's gun spinning through the air. The bear then rushed away into the canebrake. Around and around, within the space of a few hundred yards, the battle raged fiercely. The hunters were all scattered through the canebrake, when the bear chanced to head directly for Rogers, who fired and, as the bear charged, took to his heels, and but for the courage of the dogs would have been caught.

At the report of the gun, the maddened pack covered the game again, and he had to stop to shake them off. Rearing on his hind feet, he would strike down with his fore paws, his long, sharp claws making the "fur fly" wherever they struck. The bear generally strikes downward, as he is pigeon-toed, and from the conformation of his fore-arm cannot well strike laterally when rampant.

Rogers had gained on the bear by the dogs' renewed attack, but as soon as Bruin had shaken them off, he again pursued his human

foe, when old Asa, pushing Rogers aside, heroically stepped in front, and dropping on one knee, threw his rifle to his shoulder and fired. The bear, though mortally wounded, sprang upon him. I was close at hand, but could not shoot without the risk of hurting my friend. I shouted to the pack. Regardless of danger, the brave dogs rushed to the rescue, and again covered the bear, just as he had seized old Asa by the leg. I sprang forward, and reaching the opposite side struck a well-directed blow and fell back, leaving my knife in the

OLD ASA IN TRIUMPH.

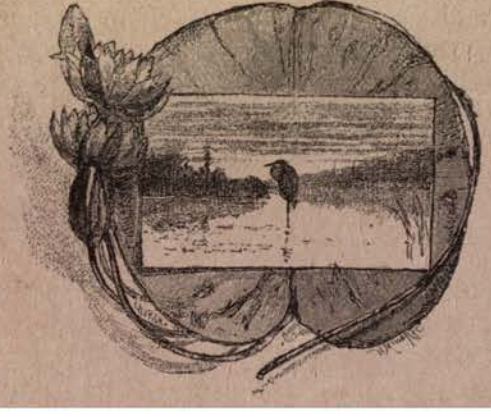
monster's heart. The experienced hunter always strikes a bear from the opposite side to which he stands, as the bear is sure to turn to the side from whence he receives the blow; and woe to the unlucky hunter caught in his death-grasp. As the bear rolled over and expired, old Asa sprang to his feet and exclaimed, as he grasped my hand, "Bully for you, old pard! A leetle more an' I would have been mince-pie for that tarnal critter, tryin' to save Greeny, thar. Hoopee, good dogs!" And, at the voice of affection from their master, they gathered around him, while the old hunter sat on the carcass of the bear and caressed his battle-scarred pets, examining all of their wounds before he looked at his own. It proved to be an ugly, though not dangerous, bite on the calf of the leg.

"Boys," he said, "we are only a mile from camp, and if I can get to the bayou just outside of this cane, I can walk with less pain than I can ride through the brake."

Refusing all assistance, the old hunter started for camp alone,

and, getting into the bayou, waded into the cold water, as he said, to numb the pain. We skinned and cut up the bear, which was no easy task, as a bear's hide does not peel off like a deer's, but is tight on his body, like a hog's, the removal of every inch requiring the assistance of the knife. We reached camp by dark, and found old Asa with his leg poulticed with medicinal herbs, in the virtues of which he was well acquainted. Wounded as he was, the old man was the life of the camp. He smoked his pipe and cracked jokes at everybody. Calling Hannibal, he instructed him in the mysteries of making a "filibuster." He first took the caul-fat, or bear's handkerchief, and spread it out on the inside of the fresh hide; then he cut slices of liver and choice bits of bear-meat, in the selection of which he was a connoisseur. Between the layers he placed a very thin slice of bacon, all the time rolling it in the caul-fat, occasionally inserting sprigs of fragrant spice-wood, as he said to give it a flavor, until a large meat sandwich was made. Then, sticking a wooden skewer through it, he roasted it before the fire. And a more savory dish never regaled the palate or olfactories of a hungry hunter.

In summing up the casualties of the fight, we found two dogs killed and seven wounded—three severely. Quiet at length settled upon our camp, the hoot of the barred owl alone breaking the stillness of the night. But it did not disturb the peaceful dreams of dogs or hunters, or of Hannibal, snoring to the accompaniment of the kettle, which hummed a lullaby as it prepared the head of Bruin for to-morrow's repast.



FOX-HUNTING IN NEW ENGLAND.

By ROWLAND E. ROBINSON.

In New England and some of the northern and middle States, the fox is hunted with two or three hounds, or oftener with only one, the hunter going on foot and armed with a shot-gun or rifle, his method being to shoot the fox as it runs before the hounds. The fox is proverbially the most cunning of beasts, often eluding by his tricks the most expert hunter and the truest hounds. Long walks are required, which take one over many miles of woods, hills, and fields, and this in fall and winter when the air is always pure and bracing.

In New England, the hunt is for the red fox and his varieties; the silver and cross foxes, the gray fox of the south and west being almost, if not quite, unknown. From the tip of his nose to the root of his tail, the red fox measures about twenty-eight or thirty inches, his tail sixteen to eighteen inches including hair, and his height at the shoulder thirteen inches. His long fur and thick, bushy tail make him look larger and heavier than he is. Of several specimens which I have weighed, the largest tipped the beam at twelve pounds; the least at seven pounds. The general color is yellowish red; the outsides of the ears and the fronts of the legs and feet are black; the chin and usually the tip of the tail, white; and

the tail darker than the body, most of its hairs being tipped with black. The eyes are near together and strongly express, as does the whole head, the alert and cunning nature of the animal.

The cross fox, much scarcer than the red, is very beautiful. It is thus described by Thompson: "A blackish stripe passing from the neck down the back and another crossing it at right angles over the

"AN HONEST FOX MUST LIVE."

shoulders; sides, ferruginous, running into gray on the back; the chin, legs, and under parts of the body, black, with a few hairs tipped with white; upper side of the tail, gray; under side and parts of the body adjacent, pale yellow; tail tipped with white. The cross upon the shoulders is not always apparent, even in specimens which, from the fineness of the fur, are acknowledged to be cross foxes. Size, the same as the common fox."

The black or silver fox is so rare in New England that to see one is the event of a life-time. The variety is as beautiful and valuable as rare. Its color is sometimes entirely of a shining black, except the white tip of the tail, but oftener of a silvery hue, owing to an intermixture of hairs tipped with white. It has probably always been uncommon here, for it is said to have been held in such estimation by the Indians of this region, that a silver fox-skin was equal in value to forty beaver-skins, and the gift of one was considered a

sacred pledge. One often hears of silver foxes being seen, but, like the big fish so often lost by anglers, they almost invariably get away.

AFTER A BREAKFAST.

Foxes are less rare in settled countries and on the borders of civilization than in the wilderness, for, though they find no fewer enemies, they find more abundant food in the open fields than in the forest. The common field-mouse is a favorite in their bill-of-fare; and the farmer's lambs and the good wife's geese and turkeys never come amiss therein. These are all more easily got than hares or grouse. In justice to Reynard it must be said, however, that when mice are plenty, lambs and poultry are seldom molested. In times of scarcity, he takes kindly to beech-nuts in the fall, and fills himself with grasshoppers and such small deer in the summer. When these fail,—why, what would you? An honest fox must live.

When not running before the hounds, he is seldom seen in daytime, except it may be by some early riser whose sharp eye discerns him in the dim dawn, moving in meadow or pasture, or picking his stealthy way across lots to his home woods. In these woods he spends his days, sleeping or prowling slyly about in quest of some foolish hare or grouse.

It is doubtful if the fox resorts to his burrows much except in great stress of weather and during the breeding season, or when driven to earth by relentless pursuit. For the most part, he takes his hours of ease curled up on some knoll, rock, or stump, his dense fur defying northern blasts and the "nipping and eager air" of the

A HAPPY FAMILY.

coldest winter night. Shelter from rain or snow-storms he undoubtedly will take, for he is not overfond of being bedraggled, though it is certain he will sometimes take to the water and cross a stream without being driven to it.

Reynard goes wooing in February, and travels far and wide in search of sweethearts, toying with every vixen he meets, but faithful to none, for his love is more fleeting than the tracks he leaves in the drifting snow. In April, the vixen having set her house in order by clearing it of rubbish, brings forth her young,—from three to six or more at a litter. This house is sometimes a burrow in sandy soil with several entrances; sometimes a den in the rocks, and sometimes, in old woods, a hollow log. In four or five weeks the queer little pug-nosed cubs begin to play about the entrance. The mother hunts faithfully to provide them with food, and may sometimes be seen on her homeward way with a fringe of field-mice hanging from her mouth. About the entrance to the den may be seen the wings of domestic poultry, wild ducks, and grouse, and the legs of lambs,—the fragments of many a vulpine feast.

It is a curious fact, and one I have never seen mentioned in print, that while the cubs are dependent on the mother, a hound will only follow her for a few minutes. Of the existence of this provision for

the safety of the young foxes I have had ocular proof, confirmed by the statements of persons whom I believe. In June, 1868, an old vixen was making sad havoc with one of my neighbors' lambs, and an old fox-hunter was requested to take the field in their defense. He proceeded with his hounds (tolerably good ones) to the woods where her burrow was known to be, and put the dogs out. They soon started her and ran her out of the woods, but greatly to the surprise of the hunter they returned in a few moments, looking as shamefaced as whipped curs, with the old fox following them. Disgusted with the behavior of his own dogs, he sought the assistance of an old hound of celebrated qualities, belonging to a neighbor. She was put out with the other dogs, with just the same result. The vixen was at last shot, while she was chasing the hounds, who then turned upon her, biting and shaking her as is their wont when a fox is killed before them; but my friend, the hunter, told me they were as sick and distressed as ever dogs were after an encounter with a skunk. About the last of May, 1875, I witnessed a like incident. A stanch old hound of my own having accompanied me on a fishing excursion, started a fox in a piece of woods where a litter of young were known to be. Anxious to preserve the litter for sport in the fall, I hastened to call in the dog. I found him trotting along with lowered tail, the vixen leisurely trotting not more than five rods in advance, stopping every half minute to bark at him, when he would stop till she again went on. I called him in as easily as if he had been nosing for a mouse, though under ordinary circumstances it would have required a vigorous assertion of authority to have taken him off so hot a scent.

If the life of the vixen is spared and she is not continually harassed by men or dogs during the breeding season, she will remain in the same locality for years, and rear litter after litter there; perhaps not always inhabiting the same burrow, but one somewhere within the same piece of woods or on the same hill. If she is much disturbed, or if she perceives that her burrow is discovered, she speedily removes her young to another retreat. The young foxes continue to haunt the woods where they were reared for some months after they have ceased to require the care of their mother, and then disperse. The habits above mentioned are common to the cross and silver foxes, as well as the red fox.

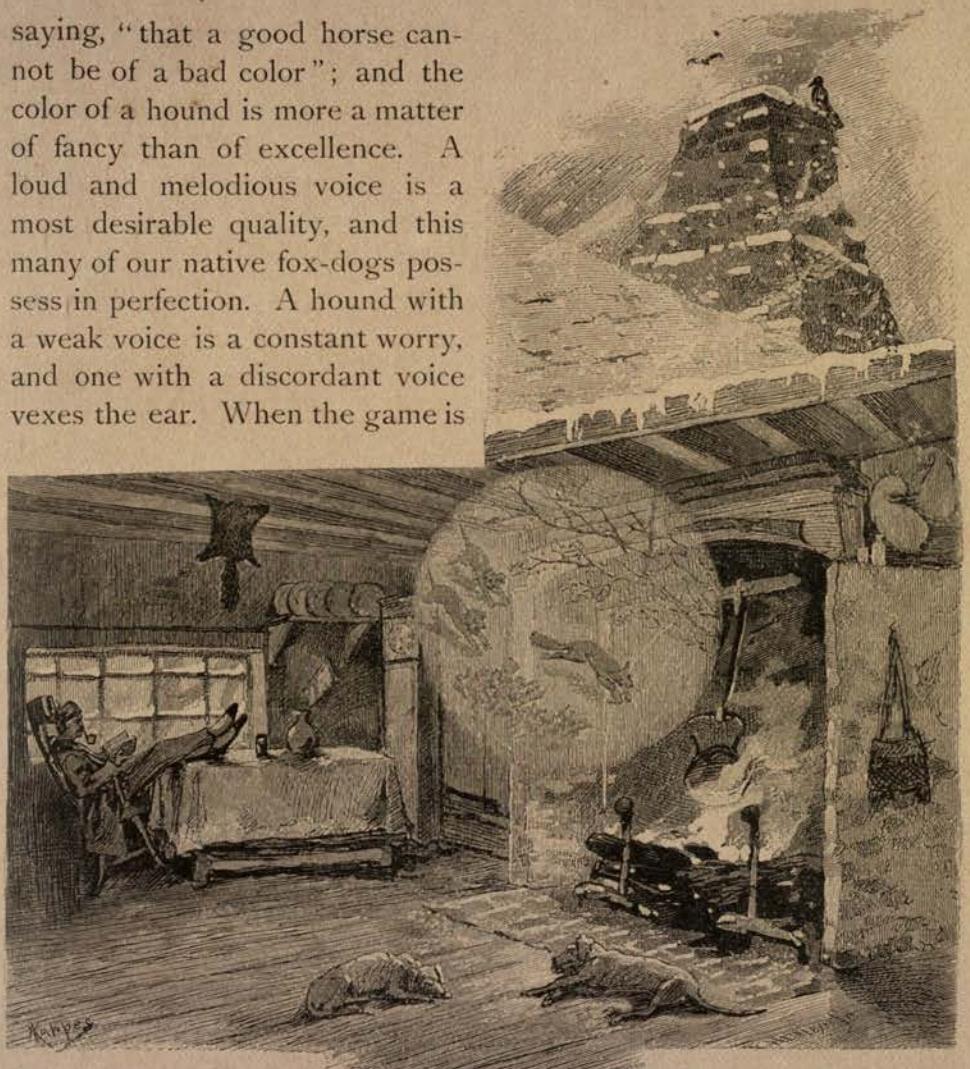
And now for the hunt. From his helpless babyhood in leafless April, Reynard has come, by the middle of the autumn, to months of discretion and to a large and increasing capacity for taking care of himself. The weapons are double-barrel shot-guns, of such weight and caliber as may suit the individual fancy. A very light gun will not do the execution at the long range sometimes required, while on the other hand, a very heavy one will become burdensome in the long tramps that may be necessary; for a man of ordinary strength, an 8-lb. gun will be found quite heavy enough. It should be of a caliber which will properly chamber its full charge of, at least, B B shot,—for I hold that the force of lighter shot will be broken by the thick fur of the fox; indeed, I would suggest still heavier pellets, say B B B, or even A.

Our hounds, not so carefully bred as they should be, cannot be classed in any particular breed. They are more like the old Southern fox-hound than like the modern English, and for our purpose are incomparably superior to the latter. They are not fleet, like him (fleetness here being objectionable, as will be shown), but of great endurance, and unsurpassable scenting powers,—for they will follow a fox through all his devious windings and endless devices, from dawn till dark, through the night and for another day. Our best dogs are well described by Shakspere in "Midsummer Night's Dream":

> "My hounds are bred out of the Spartan kind,
> So flew'd, so sanded; and their heads are hung
> With ears that sweep away the morning dew;
> Crook-kneed, and dew-lapp'd like Thessalian bulls,
> Slow in pursuit, but matched in mouth like bells,
> Each under each."

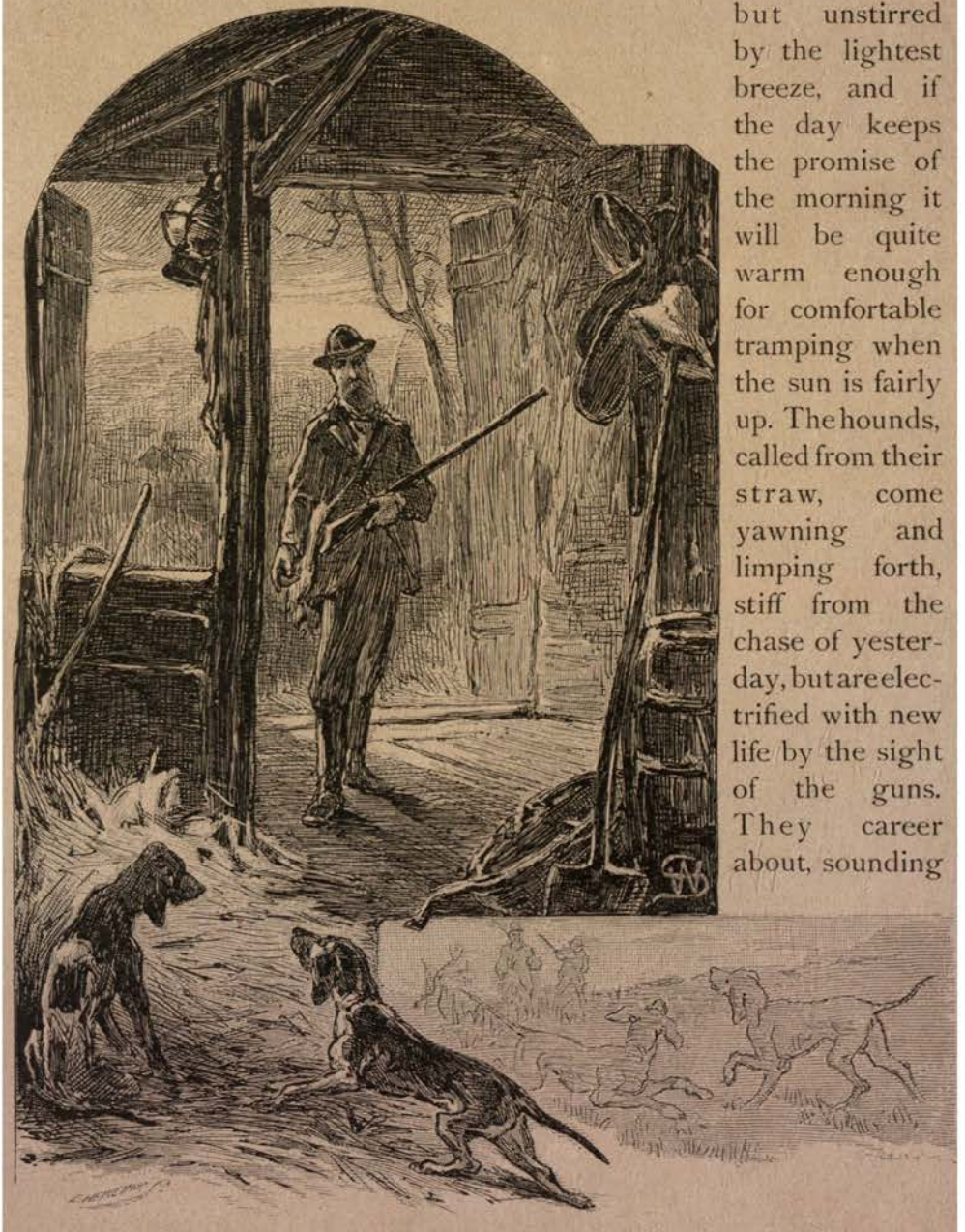
Their colors are blue-mottled, with patches of black and tan or yellow, with tan eye-patches; white, flecked with yellow, termed by old-time hunters "punkin-an'-milk"; white and black and black and tan, with variations and admixtures of all these colors. It is an old

saying, "that a good horse cannot be of a bad color"; and the color of a hound is more a matter of fancy than of excellence. A loud and melodious voice is a most desirable quality, and this many of our native fox-dogs possess in perfection. A hound with a weak voice is a constant worry, and one with a discordant voice vexes the ear. When the game is started the dog should continually give tongue, so that you (and the fox as well) may always know just where he is. The wrinkled brows and foreheads, and long pendent ears and flews of many of these dogs, give them an extremely sad and troubled expression. Perhaps (who knows?) this solemn cast of visage comes of much pondering on the knavish tricks of the wily fox, and of schemes for circumventing his many artifices. Their tails are not at all inclined to be bushy, like those of the English fox-hounds of the present day, but are almost as slender and clean as the tail of the pointer.

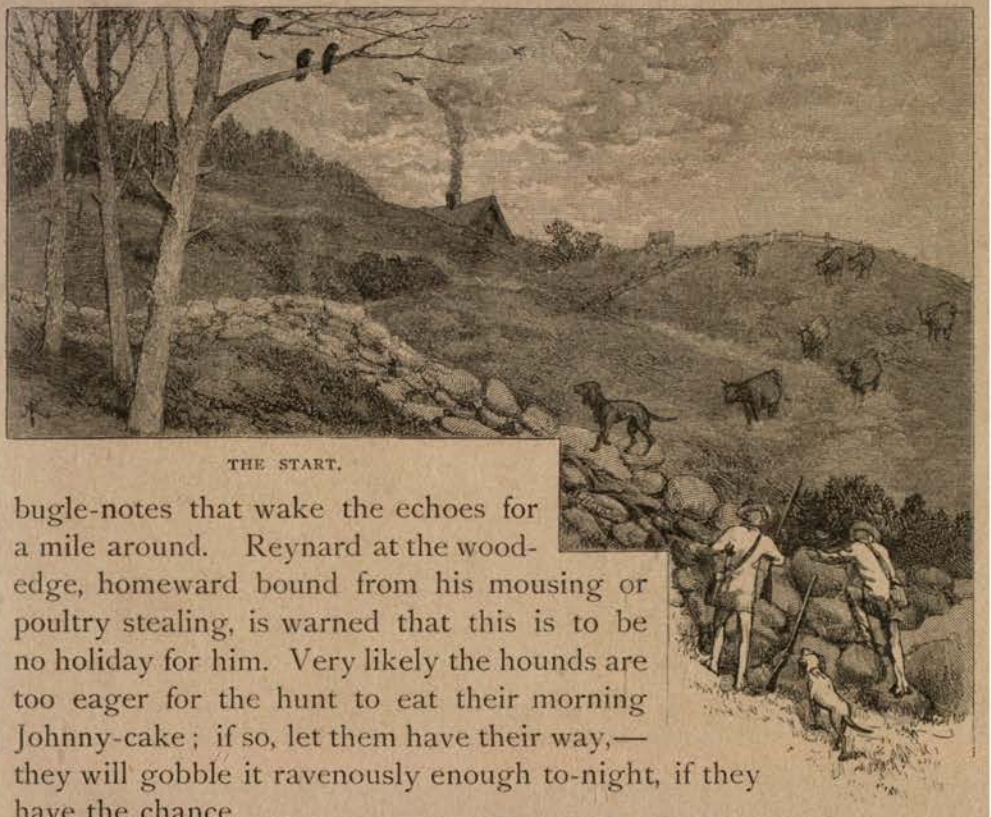


THE DOG'S DREAM.

It is the early morning of one of the perfect days of late October or early November. In the soft gray light of the growing day, the herbage of the pastures and the aftermath of the meadows are pearly with frost which is thick and white on boards and fence-rails. The air is chill but unstirred by the lightest breeze, and if the day keeps the promise of the morning it will be quite warm enough for comfortable tramping when the sun is fairly up. The hounds, called from their straw, come yawning and limping forth, stiff from the chase of yesterday, but are electrified with new life by the sight of the guns. They career about, sounding



CALLING THE DOGS.

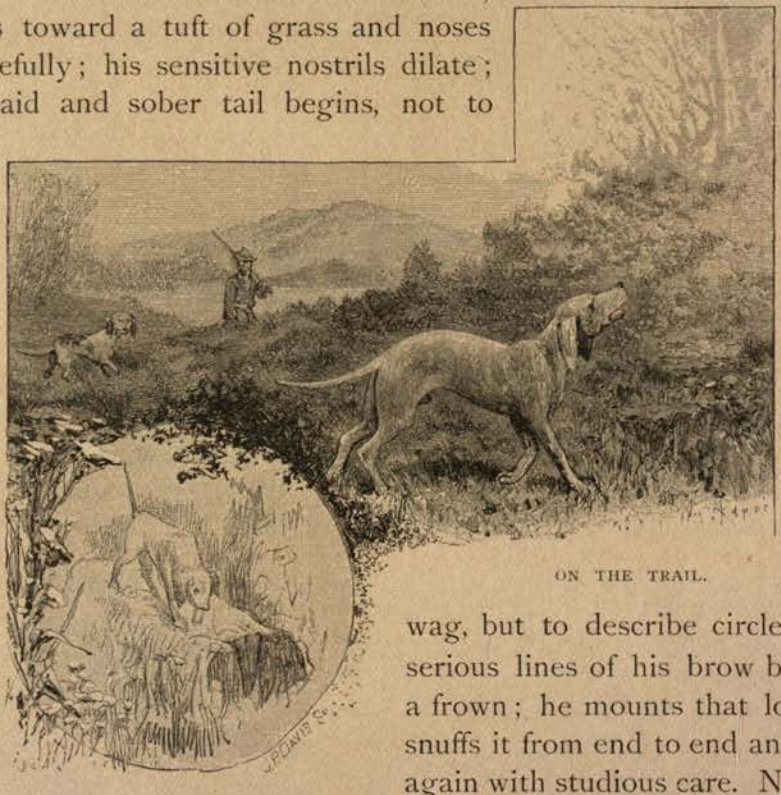


THE START.

bugle-notes that wake the echoes for a mile around. Reynard at the wood-edge, homeward bound from his mousing or poultry stealing, is warned that this is to be no holiday for him. Very likely the hounds are too eager for the hunt to eat their morning Johnny-cake; if so, let them have their way,—they will gobble it ravenously enough to-night, if they have the chance.

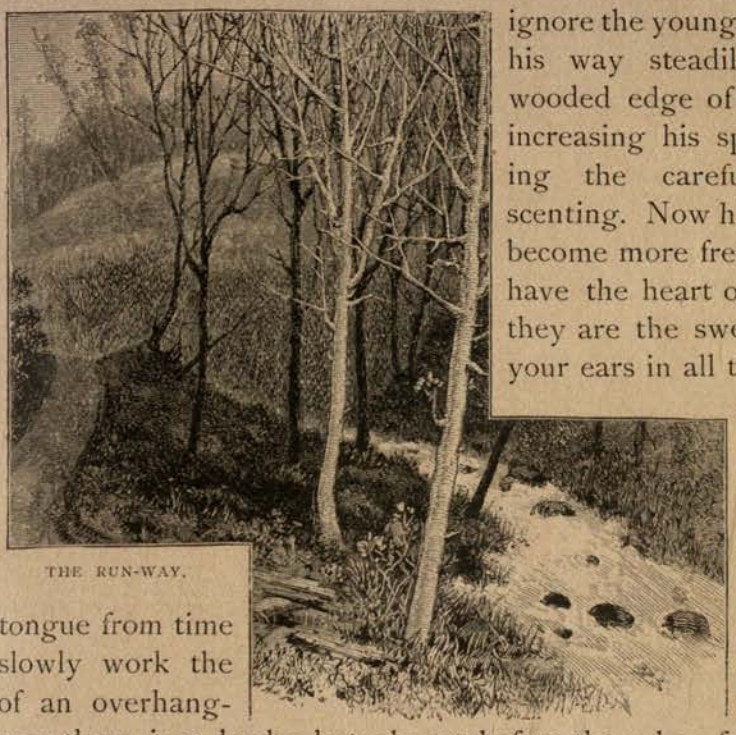
And now, away! across the frosty fields toward yonder low hill, which we dignify with the name of mountain. No song-birds now welcome the coming day; almost the only sound which breaks the gray serenity is the clamor of a flock of crows in the distant woods, announcing their awakening to another day of southward journeying, or the challenge of a cock in a far-off farm-yard. As you hurry across the home pasture, the cows stop chewing the cud, to stare curiously at hounds and hunters, and then arise, sighing and stretching, from their couches on the dry knolls. A flock of sheep start from their huddled repose and scurry away, halting at a little distance to snort and stamp at the rude disturbers of their early meditations. Almost the only signs of life are these, and the upward crawling smoke of kitchen chimneys, where sluggards are just making their first preparations for breakfast. Yours has been eaten this half hour. The old dog plods along, with serious and business-like air, disdaining and repelling all attempts of his younger companion to

beguile him into any unseemly gambols; but when you cross the fence which bounds the pasture lying along the foot of the hill, where the rank grass, mixed with last year's growth, is ankle deep, and where grass and innumerable stumps and logs afford harbor for colonies of field-mice, you find "there is life in the old dog yet." He halts for an instant and snuffs the air; draws toward a tuft of grass and noses it carefully; his sensitive nostrils dilate; his staid and sober tail begins, not to



ON THE TRAIL.

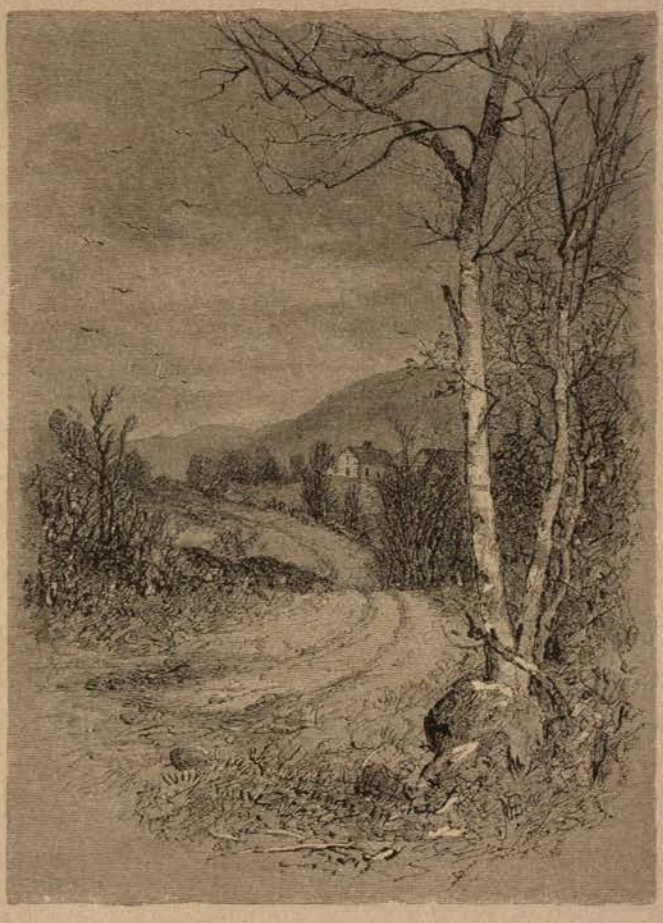
wag, but to describe circles; the serious lines of his brow become a frown; he mounts that log and snuffs it from end to end and back again with studious care. Now his loud, eager snuffing has grown to a suppressed challenge, and every muscle seems strained to its utmost tension, as he leaves the log and makes a few lopes toward the woods, stops for an instant as if turned to stone, raises his good gray muzzle skyward, and awakens all the woods and hills with his deep, sonorous voice! That way has Reynard gone, and that bugle-note has perhaps given him premonition of his doom. This note has recalled the young dog from his wild ranging, and he joins his older and wiser companion, without bringing much aid, however, for, catching the scent, he proclaims his discovery till long after he has overrun it, now and then slightly disconcerting the old truth-teller; but the veteran soon learns to



THE RUN-WAY.

ignore the youngster, and works his way steadily toward the wooded edge of the hill, never increasing his speed, nor abating the carefulness of his scenting. Now his tuneful notes become more frequent. If you have the heart of a fox-hunter, they are the sweetest music to your ears in all the world. Up the steep side of the hill he takes his way, the young dog following, and both giving tongue from time to time. They slowly work the trail to the top of an overhanging ledge, and now there is a hush; but, almost before the echo of their last notes has died away, forth bursts a wild storm of canine music. Reynard is afoot, or, as we Yankees say, "the fox is started," and the reeking scent of his recent footsteps steams hot in the nostrils of his pursuers. The hounds are now out of sight, but you hear every note of their jubilant song as they describe a small circle beyond the ledge, and then go northward along the crest of the hill. Their baying grows fainter and fainter as they bear away to the further side, till at last it is almost drowned by the gurgle of the brook.

Now, get with all speed to "the Notch," which divides the north from the south hill, for this the fox will pretty surely cross when he comes back, if back he comes, after making a turn or two or three at the north end. On this habit of his, of running in circles, and in certain run-ways as he goes from hill to hill, or from wood to wood, is founded our method of hunting him. If he "plays" in small circles, encompassing an acre or so, as he often will for half an hour at a time before a slow dog, you cautiously work up to leeward of him and try your chances for a shot. If he encircles the whole hill, or crosses from hill to hill, there are certain points, which every fox,



IN NOVEMBER.

whether stranger or to this particular woodland born, is *likely* to take in his way, but not *sure* to do so. Having learned these points by hearsay or experience, you take your post at the nearest or likeliest one, and between hope and fear await your opportunity. Such a place is this Notch, toward which with hasty steps and beating heart you take your way. When the fox returns, if he crosses to the south hill, he will come down that depression between the ledges which you face; then cross the brook and come straight in front of you, toward the wood-road in which you stand, or else turn off to the right to cross the road and go up that easy slope to the south hill, or turn to the left and cross on the other hand. Standing midway between these points, either is a long gun-shot off, but it is the best place to post yourself; so here take breath and steady your nerves.

How still the woods are! The hounds are out of hearing a mile away. No breeze sighs through the pines or stirs the fallen leaves. The trickle of the brook, the penny-trumpet of a nut-hatch, the light hammering of a downy woodpecker are the only sounds the strained ear catches. All about rise the gray tree-trunks; overhead, against the blue-gray sky, is spread their net of branches, with here and there a tuft of russet and golden and scarlet leaves caught in its meshes. At your feet, on every side, lie the fading and faded leaves, but bearing still a hundred hues; and through them rise tufts of green fern, brown stems of infant trees and withered plants; frost-blackened beech-drops, spikes of the dull azure berries of the blue cohosh, and milk-white ones, crimson-stemmed, of the white cohosh; scarlet clusters of wild turnip berries; pale asters and slender golden-rod, but all so harmoniously blended that no one object stands forth conspicuously. So kindly does Nature screen her children, that in this pervading gray and russet, beast and bird, blossom and gaudy leaf, may lurk unnoticed almost at your feet. The rising sun begins to glorify the tree-tops. And now, a red squirrel startles you, rustling noisily through the leaves. He scrambles up a tree, and, with nervous twitches of feet and tail, snickers and scolds till you feel almost wicked enough to end his clatter with a charge of shot. A blue-jay has spied you and comes to upbraid you with his discordant voice. A party of chickadees draw nigh, flitting close about and pecking the lichened trunks and branches almost within arm's-length, satisfying curiosity and hunger together.

At last, above the voices of these garrulous visitors, your ear discerns the baying of the hounds, faint and far away, swelling, dying, swelling, but surely drawing nearer. Louder rings the "musical confusion of hounds and echo in conjunction," as the dogs break over the hill-top. Now, eyes and ears, look and listen your sharpest. Bring the butt of your gun to your shoulder and be motionless and noiseless as death, for if at two gun-shots off Reynard sees even the movement of a hand or a turn of the head, he will put a tree-trunk between you and him, and vanish altogether and "leave you there lamenting."

Is that the patter of feet in the dry leaves, or did the sleeping air awake enough to stir them? Is that the fox? Pshaw! no—only a red squirrel scurrying along a fallen tree. Is that quick,

muffled thud the drum of a partridge? No, it never reaches the final roll of his performance. It is only the beating of your own heart. But now you hear the unmistakable nervous rustle of Rey-

TO DESTROY THE SCENT.

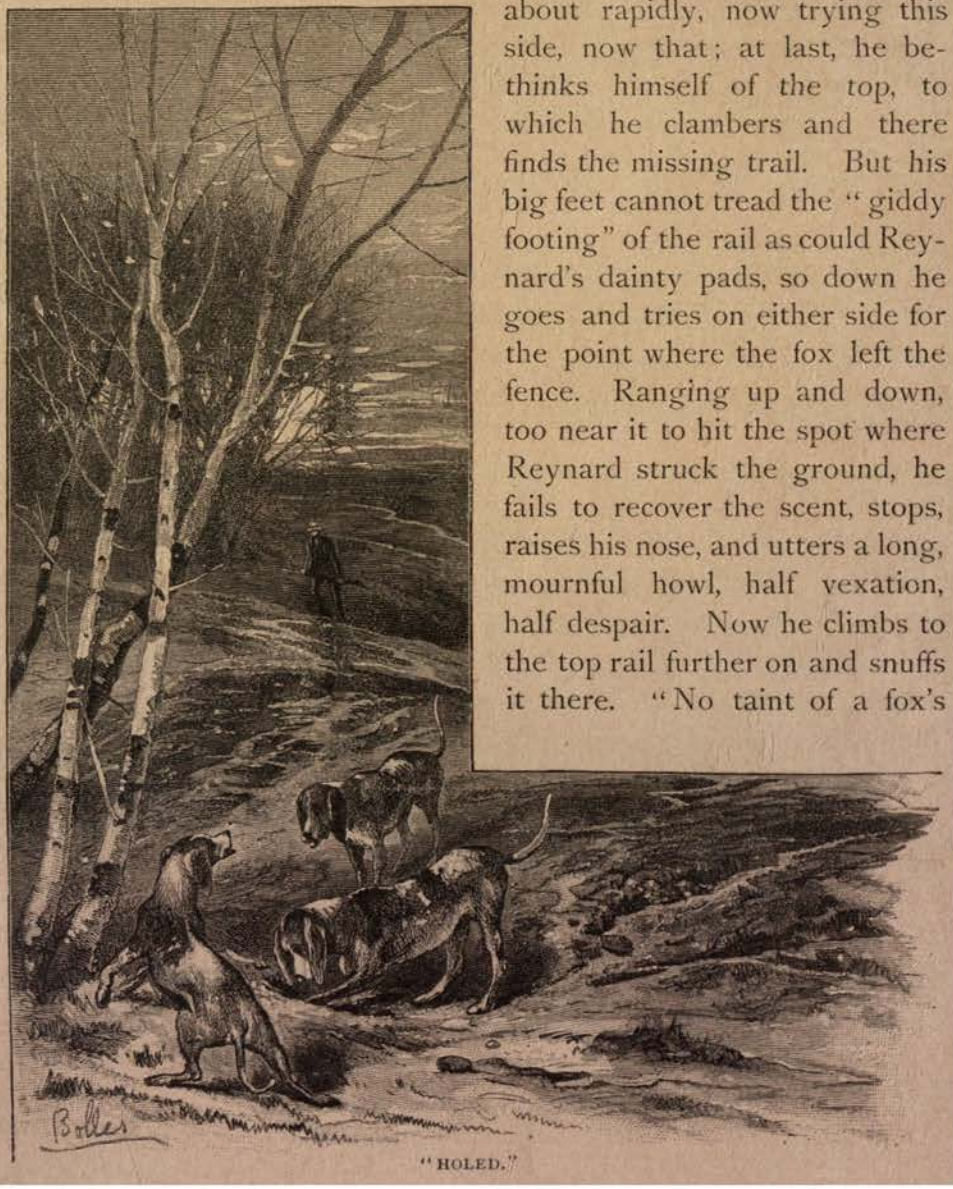
nard's footsteps in the leaves; now bounding with long leaps, now picking his way; now unheard for an instant as he halts to listen. A yellow-red spot grows out of the russet leaves, and that is he, coming straight toward you. A gun-shot and a half away, he stops on a knoll and turns half-way round to listen for the dogs. In great suspense you wonder if he will come right on or sheer off and baffle you. But a louder sounding of the charge by his pursuers sends him onward right toward you. His face is a study as he gallops leisurely along, listening and plotting. He picks his way for a few yards along the outcropping stones in the bed of the brook, and then begins to climb the slope diagonally toward you. He is only fifty yards off when you raise the muzzle of your gun, drop your cheek to the stock, and aim a little forward of his nose; your finger presses the trigger, and while the loud report is rebounding from wood to hill, you peer anxiously through the hanging smoke to learn whether you have cause for joy or mortification. Ah! there he lies, done to death, despite his speed and cunning. The old dog follows his every footstep to the spot where he lies, stops for a breath in a half surprise as he comes upon him, then seizes him by the back, shaking him savagely, and biting him from shoulders to hips. Let him mouth his fallen foe to his heart's content, no matter how he rumples the sleek fur; it is his only recompense for the faithful service he has so well performed. And now the young dog comes up and claims his reward, and be

ANOTHER STRATAGEM.

sure this morning's work will go far toward making him as stanch and true as his chase-worn leader.

But think not thus early nor with such successful issue is every chase to close. This was ended before the fox had used any other trick for baffling the hounds, but his simplest one of running in circles. An hour or two later, and old fox, finding the dogs still holding persistently to all the windings of his trail, would have sped away to another hill or wood a mile or so off, and would have crossed newly-plowed fields, the fresh earth leaving no tell-tale scent; would have taken to traveled highways, where dust and the hoofs of horses and the footsteps of men combine to obliterate the traces of his passage; or have trod gingerly along many lengths of the top rails of a fence and then have sprung off at right angles with it to the ground, ten feet away; and then, perhaps, have run through a flock of sheep, the strong odor of whose feet blots out the scent of his. These artifices quite bewilder and baffle the young dog, but only delay the elder, who knows of old the tricks of foxes. Nothing can be more admirable than the manner of his working, as he comes to the edge of the plowed field. He wastes no time in useless pottering

among the fresh-turned furrows, but with rapid lopes skirts their swarded border, till, at a far corner, his speed slackens as his keen nose catches the scent again in the damp grass; he snuffs at it an instant to assure himself, then sounds a loud, melodious note, and goes on baying at every lope till the road is reached. Along this he zigzags till he finds where the fox has left it. And now comes the puzzling bit of fence. The old dog thinks the fox has gone through it; he goes through it himself, but finds no scent there; puzzles about rapidly, now trying this side, now that; at last, he bethinks himself of the top, to which he clambers and there finds the missing trail. But his big feet cannot tread the "giddy footing" of the rail as could Reynard's dainty pads, so down he goes and tries on either side for the point where the fox left the fence. Ranging up and down, too near it to hit the spot where Reynard struck the ground, he fails to recover the scent, stops, raises his nose, and utters a long, mournful howl, half vexation, half despair. Now he climbs to the top rail further on and snuffs it there. "No taint of a fox's



"HOLED."

foot is here," so he reasons, "and he must have jumped from the fence between here and the place where I found it," and acting on this logical conclusion, he circles widely till he has picked up the trail once more, and goes merrily on to the sheep pasture. Here satisfying himself of the character of this trick, he adopts the same plan employed at the plowed field, and after a little finds the trail on the other side and follows it to the hill, but more slowly now, for the fox has been gone some time; the frost has melted, the moisture is exhaling, and the scent growing cold. The fox has long since reached the hill and half encircled it, and now hearing the voices of the hounds so far away and so slowly nearing, has bestowed himself on the mossy cushion of a knoll for rest and cogitation. Here he lies for a half hour or more, but always alert and listening, while the dogs draw slowly on, now almost losing the trail on a dry ledge, now catching it in a moist, propitious hollow, till at last a nearer burst warns poor sly-boots that he must again up and away. He may circle about or "play," as we term it, on this hill, till you have reached a run-way on it where you may get a shot; or, when you have toiled painfully up the steep western pitch and have just reached the top, blown, leg-weary, but expectant, he will probably utterly disappoint and exasperate you by leaving this hill and returning to the one he and you have so lately quitted,—yea, he will even intensify the bitterness of your heart by taking in his way one or two or three points where you were standing half an hour ago! What is to be done? He may run for hours, now on the hill where he was started, or he may be back here again before the hunter can have regained that. To hesitate may be to lose, may be to gain, the coveted shot. One must choose as soon as may be and take his chances. If two persons are hunting in company, one should keep to this hill, the other to that, or while on the same hill, or in the same wood, each to his chosen run-way, thus doubling the chances of a shot.

At last, the hounds may be heard baying continuously in one place, and by this and their peculiar intonation, one may know that the fox, finding his tricks unavailing, has run to earth, or, as we have it, "has holed." Guided to his retreat by the voices of the hounds, you find them there, by turns, baying angrily and impatiently and tearing away, tooth and nail, the obstructing roots and earth. If in a sandy or loamy bank, the fox may, with pick and spade, be dug

ignominiously forth, but this savors strongly of pot-hunting. If he has taken sanctuary in a rocky den, where pick and spade avail not, there is nothing for it but to call the dogs off and try for another fox to-day, or for this one to-morrow, when he shall have come forth again. This is the manlier part, in either case, for Reynard has fairly baffled you, has run his course and reached his goal in safety.

Sometimes an old fox, when he hears the first note of the hounds on the trail he made when he was mousing under the paling stars, will arise from his bed, and make off at once over dry ledges, plowed fields and sheep pastures, leaving for the dogs nothing but a cold, puzzling scent, which, growing fainter as the day advances and the moisture exhales, they are obliged, unwillingly, to abandon at last, after hours of slow and painstaking work. A wise old hound will often, in such cases, give over trying to work up the uncertain trail, and guessing at the direction the fox has taken, push on, running mute, at the top of his speed, to the likeliest piece of woodland, a mile away perhaps, and there, with loud rejoicings, pick up the trail. When after a whole day's chase, during which hope and disappointment have often and rapidly succeeded each other in the hunter's breast, having followed the fox with untiring zeal through all the crooks and turns of his devious course, and unraveled with faultless nose and the sagacity born of thought and experience his every trick,—the good dogs bring him at the last moment of the gloaming within range, and by the shot, taken darkling, Reynard is tumbled dead among the brown leaves, great is the exultation of hunter and hound, and great the happiness that fills their hearts. After tramping since early morning over miles of the likeliest "starting-places" without finding any trail, but cold and scentless ones made in the early night, and so old that the dogs cannot work them out, as the hunter takes his way in the afternoon through some piece of woodland, his hounds as discouraged as he, with drooping tails and increased sorrow in their sad faces, plodding, dejected at heel, or ranging languidly,—it is a happy surprise to have them halt, and with raised muzzles and half-closed eyes, snuff the air, then draw slowly up wind with elevated noses, till they are lost to sight behind gray trunks and mossy logs and withered brakes, and then, with a crashing flourish of trumpets, announce that at last a fox has been found, traced to his lair by a breeze-borne aroma so subtle that the

BEARING HOME THE BRUSH.

sense which detects it is a constant marvel. A fox started so late in the day seems loath to leave his wood, and is apt to play there till a shot gives to the hunter and hounds their reward.

When one sees in the snow the intricate windings and crossings and recrossings of the trail of a mousing fox, he can but wonder how any dog by his nose alone can untangle such a knotted thread till it shall lead him to the place where the fox has laid up for the day; yet this a good hound will unerringly do, if the scent has not become too cold. To see him do this, and to follow all his careful, sagacious work, are in nowise the least of the pleasures of this sport.

It is a favorite season for fox-hunting when the first snows have fallen, for though the walking is not so good, and hounds are often much inclined to follow the track by sight as well as by smell, the tell-tale foot-prints show pretty plainly which way the fox has gone, how

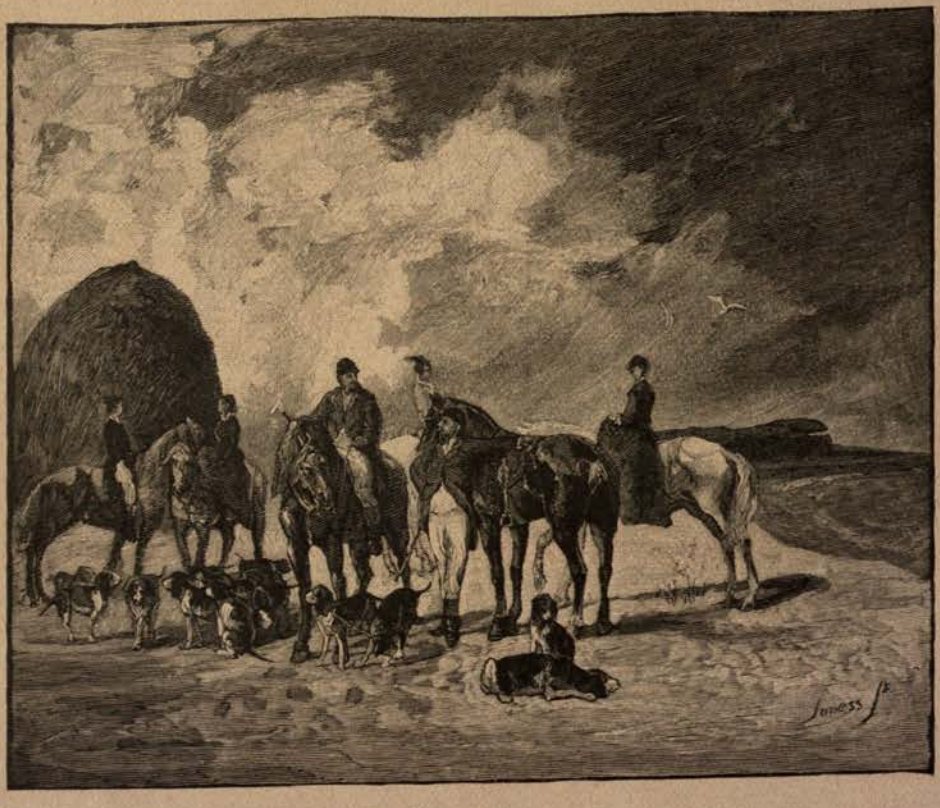
long he has been gone, and whether it is worth your while to allow the dogs to follow his trail; and you are enabled to help the hounds in puzzling places, though a dog of wisdom and experience seldom needs

TANTALIZING THE DOGS.

help, except for the saving of time. A calm day is always best, and if warm enough for the snow to pack without being at all "sposhy," so much the better. Though it is difficult to "start" a fox during a heavy snow-fall, if you do start him, he is pretty certain to "play" beautifully, seeming to reckon much on the obliteration of his track by the falling snow. At such times he will often circle an hour in the compass of two or three acres. Glare ice holds scent scarcely more than water. This, no one knows better than the fox, and you may be sure he will now profit by this knowledge if naked ice can be found. He will also run in the paths of the hare, pick his way carefully along rocky ridges swept bare of snow by the wind, leaving no visible trace of his passage, and, at times, take to traveled highways. If the snow is deep and light so that he sinks into it, he will soon, through fatigue or fear of being caught, take refuge in den or

burrow. If the snow has a crust which bears him, but through which the heavier hounds break at every step, he laughs them to scorn as he trips leisurely along at a tantalizingly short distance before them. Hunting in such seasons is weary work, and more desirable then is the solace of book and pipe by the cozy fireside, where the hounds lie sleeping and dreaming of glorious days of sport, already past or soon to come.

In winter as in autumn, the sport is invigorating and exciting, and Nature has now, as ever, her endless beauties and secrets for him who hath eyes to behold them. To such they are manifold in all seasons, and he is feasted full, whether from the bald hill-top he looks forth over a wide expanse of gorgeous woods and fields, still green under October skies, or sees them brown and sere through the dim November haze, or spread white and far with December snows. The truest sportsman is not a mere skillful butcher, who is quite unsatisfied if he returns from the chase without blood upon his garments, but he who bears home from field and forest something better than game and peltry and the triumph of a slayer, and who counts the day not lost nor ill spent though he can show no trophy of his skill. The beautiful things seen, the ways of beasts and birds noted, are what he treasures far longer than the number of successful shots.



A MEET AT NEWPORT.

A BUFFALO HUNT IN NORTHERN MEXICO.

By GEN. LEW. WALLACE,

AUTHOR OF "THE FAIR GOD," "BEN HUR," ETC.

Part I. Going to the Hunt.

ONE traveling to the far city of Chihuahua by way of Monterey and Saltillo must cross what the Mexicans call El Desierto, which is not to be understood as a region of shifting sand and mud-gray mountains, like the deserts of the Bedawee. It is only a rainless belt—rainless in the summer and fall and part of the winter. More fertile land, speaking of the land itself, is not on the globe. The results of irrigation by the sufficient water-courses are incredible to strangers, while the plateaus and long swales between mountains, and frequently the mountains clear to their crests, are covered with rank grasses which, grown in the brief season of rain, are peculiar in that they cure themselves in the standing stalk. Such are the *pasturas* of Durango and Chihuahua, vast enough and rich enough to feed and fatten all the herds of whatever kind owned by men.

The resting-places on the way to the desert are Parras, celebrated for its sweet red wines and the wonderful beauty of its site and surroundings; Alamos, most rural of Mexican towns, dominating the great Laguna district, once so coveted by the dead president of the Latter Day Saints; and Mapimi, whence, off the road right or left, lo, the dreaded wilderness!

The towns named are two and three days apart, with certain ranchos between them, but for which the wayfarer would be compelled to bivouac where the night found him, on the open plain or

under some great rock, and I am not certain but the plain or the rock would furnish preferable lodging. The peon, however, to whom the sunburnt and perishing habitations have fallen, is of simple soul, full of easy content. He and Nature live close neighbors, and what with much borrowing from her, he has few needs ungratified, and no experience of better things to dog him with vain wishes. Of these places of torment—I speak as somewhat used to civilized ways—there rise vividly to mind Seguein, Bocarilla, Tierra Leon, and Salitre. Should my reader be of the class sometimes smitten with a longing for a home in a desert, let me recommend to him a day and night in Salitre. Besides the solitude of the waste place it is squatted in, the flavor of *muscal*, in constant distillation, hangs round it all the year. Superb specimen of a low-down rancho, nothing need be said of it as a hotel.

But these midway stops are not all Bocarillas and Salitres. The hacienda of Patos was the residence of the administrator of the great Carlos Sanchez, who, in Maximilian's day, was monarch of over seven thousand peons, settled on his estate of 8,131,242 acres. With such possessions it is not wonderful that Carlos was overcharmed by the prospect of an empire; and when he accepted the office of Grand Chamberlain to the short-lived emperor, it is not more strange that Juarez, the Lincoln of his country, followed him with a decree by which Patos became the property of the nation, subject to purchase. A more beautiful place will scarcely be found in Mexico. He who has seen the *patio* of the *Casa Grande*, and rested in the coolness of its broad colonnade, may not soon forget Patos, which he comes upon from the hill-country between Saltillo and Parras, an unexpected Paradise on a grim, purgatorial road.

Then Hornos will not out of mind. First heard of at Alamos, it is finally overtaken at the end of a long day's journey. Its externals are nothing,—four dead faces of cream-white stone, originally softer than the coquina of Florida,—no windows, one door with two mighty valves which look as if they might have once hung in the Joppa gates of Jerusalem.

A hospitable Spaniard told me the story of the house. Señor Don Leonardo Zuloaga was a European by birth and education. He owned a great estate on the edge of the unexplored Bolson, extending quite to Alamos on the south. The fortune was ducal. There

ON THE ROAD.

was in his tastes a streak of savagery, and to indulge it he wandered out so far in the desert and built this fortalice. Then he brought pictures, books, wines, guns, dogs, horses; friends followed in swarms, his hospitality was semi-regal; when his guests palled of feasting, drinking, gambling, and hunting deer and wolves, not seldom he led them in long pursuit of the Comanche, or Lipan, or Apache, all quite as untamable as wolves. The Lagunieros were of his tenantry—fierce, idle, independent republicans, upon whom not even the French could make an impression, though they plied them with fire and sword. One day, they came up and demanded that he rent them certain lands upon their terms. He refused; war ensued, and regular battles. Zuloaga was driven off, and finally died of sheer

mortification, a disease with all over-proud souls. Gonzales Herrera, a brutal ranchero, assumed the estate by right of conquest, and supplanted the unquestioning hospitality of the proprietor with an out-

JUAN.

lawry strong enough to defy the state, backed by the national government.

To the door of this sadly haunted dwelling in the wilderness we drove, the evening of an October day in the year 1867. The party consisted of Colonel C——, an American; Mr. Roth, a German; myself, and three *mozos*,—that is to say, three native Mexicans, chattels of his excellency Don Andreas Viesca, governor of the State of Coahuila—brave men, true, honest, affectionate, at home on the highways of the desert, and brimful of experience derived from life-long pilotage to and fro on all the beaten marches of Northern Mexico. Juan, Teodora, and Santos,—only their baptismals are given, as in the sister republic nobody troubles about the surname of a peon. Of the trio, the first was our coachman, and the second our

SANTOS.

rear guard; while the third went always before to spy out the land for which he had eyes of the far reach of an eagle's, good for the unusual in any form,—dust in the valley, smoke on the mountain, or what not. This half-military order of travel, be it remarked, was not affected by the party as a choice or an eccentricity; it was merely a precaution against the enterprise of ladrones in general, and just then a necessity, as the journey carried across the line of a raid for scalps and plunder, in vigorous execution by a band of Apaches from the region of the Conchas river, of whom more anon.

To the very door we drove without seeing a soul. I pleased myself thinking how different in the day of the romantic Don Leonardo. Then swarthy retainers held the portal in swarms, and, seeing us afar, they would have run to meet us, the effusion of their welcome being but notice in advance of the politer reception in store for us by

the generous master himself. Then the great house, so tomb-like in its present silence, would have been noisy as a populous khan in an Orient desert. As it was, we halted outside, while Santos rode in

THE "MOZO."

through the half-opened entrance unchallenged, unsaluted. We heard the hoofs of his horse ring the echoes of the arched, but dirty, passage to the patio. Was there no warder—no steward? Did the castle keep itself? Our *mozo* at length appeared with answer—a sleepy-looking wretch in jacket and breeches of rusty leather, under a great *sombrero* of the genuine old style, and withal a swagger so easy-going, yet so perfect as an emphasized insolence, that only the pencil can do it justice.

The man announced himself master of the house, and gave us permission to pass the night within. We would have to find our own beds; his only contribution to our supper would be a mess of warm *frijoles;* he had fodder for our cattle. *Ay de mi,* Zuloaga!

IN THE REAR COURT.

To be sure, there was no barbican defending the entrance, nor portcullis a-swing on creaking chains, nor overshadowed grass-grown ditch; yet, as we rolled in, I thought of Branksome tower; of the stag-hounds, weary of the chase, and asleep upon a rushy floor; of the kinsmen of the bold Buccleuch—the nine and twenty knights of fame, of whom the matchless master sang:

> "They carved at the meal
> With gloves of steel,
> And they drank the red wine through the helmet barr'd."

A very martial vision, by the troth of a paladin! But instead, some nomadic children of the desert, going, they knew not where nor for what, were in full possession of the patio, resting happily from their travel of the day.

We alighted from the carriage in a square court-yard,—*patio*, in the Spanish,—paved and quite spacious. On the four sides doorways without doors yawned darkly at us. The purposes the chambers served in the golden time I knew not; when we found them they were stables; out of some, the long-horned cattle of the nomads looked, bellowing for food; into others, our mules were taken.

THE SCHOOL OF THE LARIAT.

"There is plenty of room; take your choice," he of the mild manner said, when we spoke of disposing of ourselves for the night. We set out forthwith to find the cleanest and best aired unoccupied room.

Through another arched passage, into another square court; and company, nice-looking people, who actually arose and touched their hats to us, though at the moment of our appearance they were laughing with great gusto. Two children—brown-skinned, naked little fellows—had opened a school of the lariat, for the entertainment of the strangers. Gaunt goats, exceedingly tall and strong, served them as steeds; a gander answered for game. They rode with the skill of monkeys and the grace of cupids. The

"UNDER THE COLONNADE."

victim fled, hissing and cackling, on wings of fear. When at length the loop hitched around his neck, the exhibition was at an end, and, paying our contribution, we went our way. Next day, we found the polite gentry were travelers like ourselves, only they were going to Parras from Parral, their place of residence.

On into the heart of the castle, another passage and another court,—this latter marked by lingering remains of magnificence,—in the center a ruined fountain, and on all sides a continuous colonnade with fluted pillars and chiseled capitals. There were reminders also of a garden, such as sunken beds thinly garnished with flowerless shrubs, and old rose-trees sickly and untended, and other trees, amongst which I recognized a languishing orange and some stunted figs. Half a dozen bananas, their leaves unfurled broad and bright as new banners, arose out of the basin of the fountain in undiminished vigor, relieving the desolation of the place, and filling it with the glory of flame. Here, before the fatal heart-break struck him, Zuloaga and his guests tasted their much pleasance. Under the colonnade yonder it was easy to imagine the hammocks yet swinging,

IN THE CORRIDOR.

while the gentlefolk smoked, read, or dozed about them; meanwhile, the largesse of flowers and the cantata of falling waters. There, at the basin, by a table, in the shade of the flaring bananas, the prodigal master used to stand laughing, as, dice-box in hand and high

overhead, he rattled the white tessaræ careless of fortune, so soon and so utterly to turn against him. From that room, marked by the carven door, music flowed stream-like out into the moonlit court, voices of women leading, beautiful women taught by the maestros of Durango, may be by the maestros of the capital. Well, into that room we went—in honor of the shade of the departed, I took off my hat; there, too, were traces of the glory's time—tessellated floor, frescoed ceiling, on the walls frame-marks of pictures and

THE PATIO.

mirrors. *Ay de mi*, Zuloaga! Evil the hour War came in grim-visaged and cruel, and dispersed the waltzers, the singers, and the smokers, and, of all the dainty furniture, left us but one long table on which to spread our pallets in rest of our weary bones. Needless to say, we adopted the table; it was hard, but it lifted us above the range of fleas, and then—ah, if the gallant Spaniard should wake from his sleep and come to us in dreams! *Viva!*

We returned then to the first patio in search of our *mozos*, and were greatly astonished there. The house, apparently so deserted, had in our absence given up an unexpected tenantry; men, women, and children—so many! where did they all come from?—were crowded around a delicate-looking shepherd lad

who sat on a tough little jenny telling a story, to which we also gave instant ear.

About noon, he said, while with his flock in the desert, he had seen away across the *pastura* a black mass come slowly toward him, spreading as it came. Indians it was not; he rode toward it, and—*Madre de Dios!* it was a herd of buffaloes. And thereupon every one in the patio listening took fire, and cried *Madre de Dios!* One of the gentlemen bound down the road to Parras, cooler than the rest, pushed through the excited throng and put to the lad a series of questions.

"Buffaloes, did you say?"

"Yes, sir."

"How far out were they?"

"From here?"

"Yes."

"About three leagues."

"In what direction were they moving?"

"From the sun."

The lad meant to say northward.

"Was it a big herd?"

"Very big, sir. I could not count them."

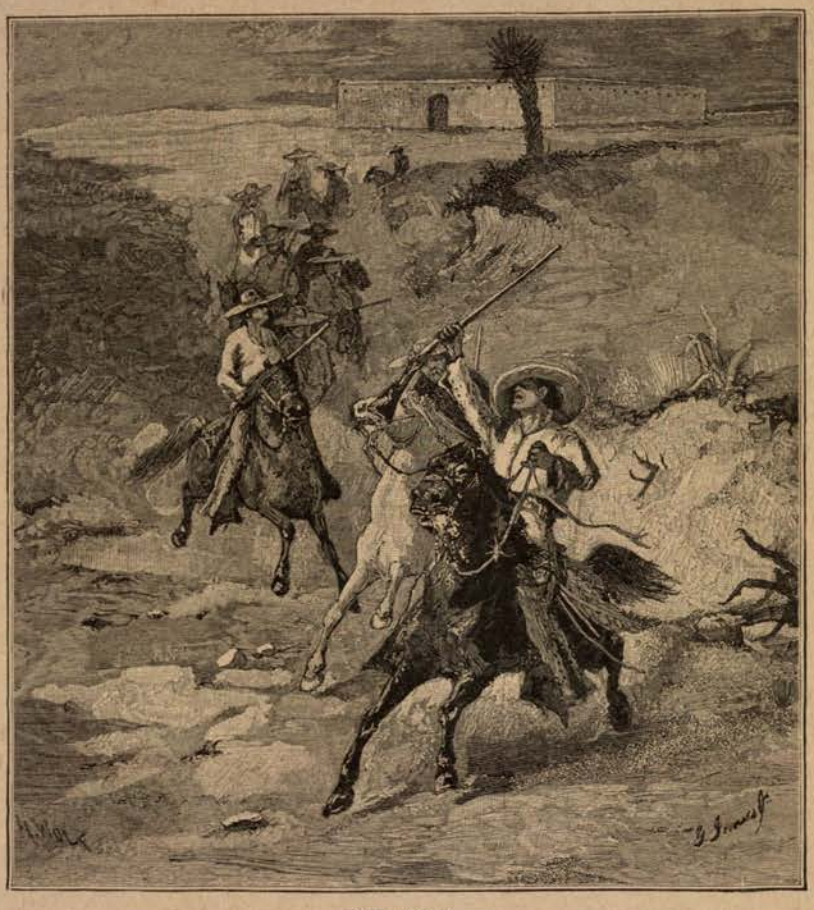
"A thousand?"

"Oh, many more, sir."

We were satisfied, my friends and I, and walked away, leaving the patio all calcitrant with excitement. Soon the strangers followed us. One of them introduced himself as Don Miguel de —— (the last of the name has slipped my memory), a merchant of Santa Rosalia, going to Parras for a supply of *manta*—coarse cotton stuff.

"We have about concluded," he said, "to lie over to-morrow and go hunting. It has been many years since buffalo came so far south; in fact, we cannot any of us remember to have heard of such a visitation in these parts. The opportunity is too rare and good to be lost. Will you go with us, gentlemen? We shall be delighted with your company."

My friend, the colonel, had been a soldier from beginning to end of the great war, and earned his title; now, *en passant*, his name is a familiar one in Brazil and in the far up-country Bolivia, whose landlock he is about to break. They know him, too, in the tight little



THE START.

isle where to be known argues a merit out of the common. His spirit arose at the suggestion of the courteous Mexican; he spoke to me, then replied that nothing would make us happier, only we had no horses.

Don Miguel smiled.

"You cannot have been long in these parts," he said. "Horses here are to be had for the asking. We will see you supplied."

The offer was accepted, and the party was to start at five o'clock next morning, under guidance of the shepherd.

Part II. The Hunt.

We did not get started till day, though we breakfasted by candle-light. The sally from the patio in which, midst the confusion and the seethe and boil of several tempests in an unclean tea-

A GROUP OF VAQUEROS.

pot, the final preparations were made was like a charge of untrained cavalry; nor might one have said which were most excited, the horses or the men. For a mile or more, after the exit, there was furious racing through a dense cloud of dust. When at last we drew together and halted to let the guide front, we found the party, about twenty in number, all Mexicans but the colonel and myself. Mr. Roth had declined the sport.

"Who are these people?" I asked.

Don Miguel glanced over the motley crowd.

"*Quien sabe, señor?*" ("Who knows, sir?")

I called Santos and asked him the question. The good fellow immediately rode here and there amongst them, and returned with this answer:

"*Hay rancheros—todos.*" ("They are all rancheros.")

A *ranchero* is an independent son of the Mexican soil, generally a renter of lands, always owner of a horse, on which he may be said to live and have his being. To-day a cattle-herder *(vaquero)*, to-morrow a soldier, this week a gambler, next week a robber: with all his sins, and they are as his hairs in number, he has one supreme

excellence—you may not match him the world over as a rider, not though you set against him the most peerless of the turbaned knights of the *jereed.* Once it was my fortune to see a thousand *rancheros,* in holiday garb and mounted, sweep down at a run to meet President Juarez, then *en route* to begin his final campaign against the hapless Hapsburger. They literally glistened with silver—silver on saddle and bridle, silver on jacket and trowsers, silver on hats, silver on heels; and, as with *vivas* long and shrilly intoned, and stabs of rowel merciless and maddening, they drove their mustangs—the choicest of the wild herds—headlong forward, the spectacle was stirring enough to have made the oldest hetman of the Cossacks young again. No wonder Kleber never ceased admiration of the Mamelukes who charged his squares over the yellow sands under the Pyramids. These, my *compañeros* of the hunt, were not in holiday attire. Their clothes were plain tan-colored leather, yet they rode like the thousand, and when I looked in their faces there was no mistaking the tribal relation. The *rancheros* of the desert of Durango are lineally akin to the *rancheros* of Tamaulipas and their brothers of Sonora.

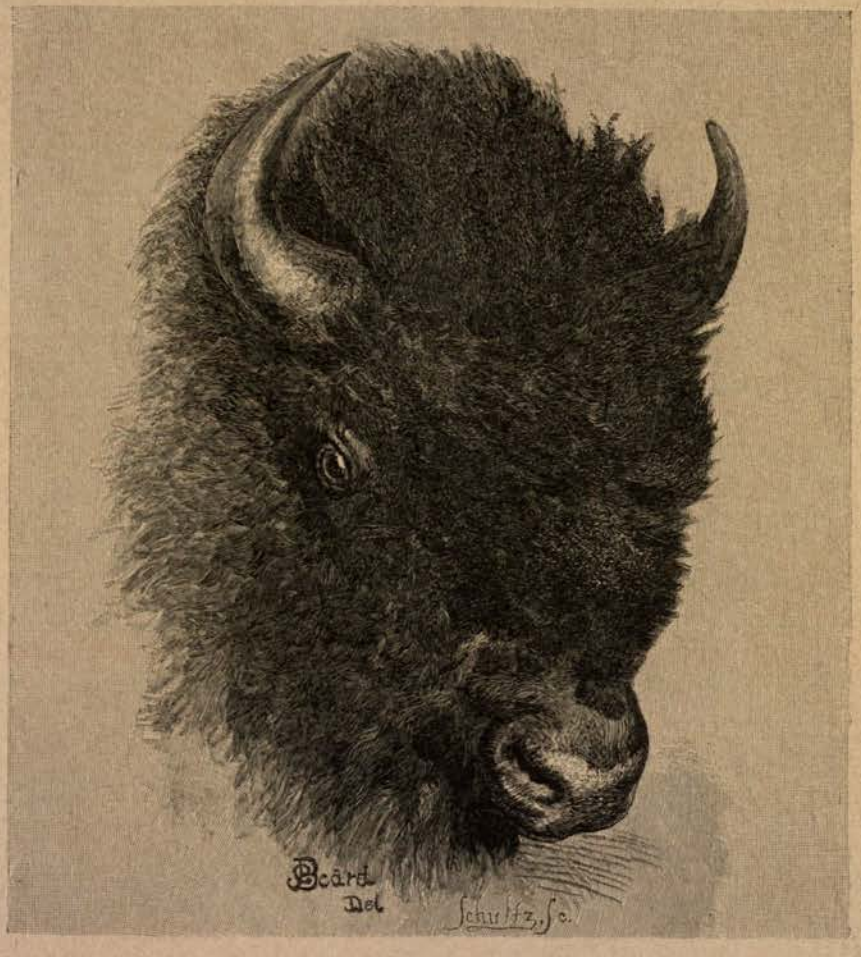
My friend and I were well mounted,—Don Miguel had dealt fairly by us,—yet we could not ride like the Mexicans. Their system is essentially different from ours; whereas we use the rein for every movement of the horse,—forward, right, left, backward, check,—they will ride all day keeping it loose over the little finger; a pressure of the knee, an inclination of the body, a wave of the bridle hand, in extreme cases a plunge of the spur, are their resorts. A pull on one of their bits, one pull such as our jockeys are accustomed to at the end of a race, would drive the beasts mad, if it did not make fine splinters of their jaws.

In connection with the excellences of my comrades; it may be well to add that their arms were of every variety, from a Sharpe's repeater to an *escopeta,* some of the latter being identical with the bell-mouthed blunderbusses of good Queen Bess. I noticed one which had on it a stamp of the Tower; it was smit with a devouring leprosy of rust, and looked as if Raleigh or one of the later buccaneers had taken it from the old arsenal and dropped it overboard, as he sailed and sailed. Verily, I had rather been a buffalo fired at with such a piece, than the hunter at the other end to do the firing.

We moved rapidly along a plain road; after a league or more, the road faded into a dim path; another league, and we were in the mid-desert. Moved by the novelty of the situation, I let the party pass me, that I might be alone.

Mira! A world of grass, each blade brown or yellowing on the stalk, not dying so much as curing itself,—just far enough gone to rustle at the touches of the winnowing winds; a world of grass without a flower, nor even a wee anemone. The trees are few in number and variety. Off yonder is a solitary cabbage-palm, tall, shaggy, crowned with a shock of green bayonets; it stands motionless, the image of a listening watchman. Here and there groves thinly fleck the broad brown face on which they endure, in the distance wearing the air of neglected apple-orchards. They are mesquite trees, for which I confess partiality, not for their beauty, but for their *courage*. The idea and the word, as applied, may startle the reader; yet I sometimes please myself thinking that in the kingdom of plants there is a degree of the royal quality. The lichen, up in the realm of the reindeer, and the willow, which survives long burial by the snows everlastingly whitening the echoless shores of Lincoln Sea, must be braver than the palm on the Nile or the redwood on the Amazon. So with the mesquite of the desert. Ah, here is one of them close by,—knotted, gnarled, dwarfed, brittle, black of bark, vaster of root than top, yet with a certain grace derived from its small, emerald green leaves, so delicately set on trembling fronds. I have only to look at it once to recognize a hero, not of many tilts with storms, but of an endless battle with drought and burning sun, living sometimes years on nothing but faintest dews. Is it wonderful that it grew branching from the ground so low as to be trunkless? Or that its limbs separated in the beginning, and did their feeble climbing wider and wider apart each day of life, as hateful of each other and the humble stem which generated them? Or that at last, when full grown, yet comparatively a shrub of low degree, thin and wan of foliage, its shade ill suffices to cool the gophers nestling down deep amongst its sprawling roots, or the crickets, panting as they sing in the gray mosses of uncertain life, stitched like prickly patches on its weather side?

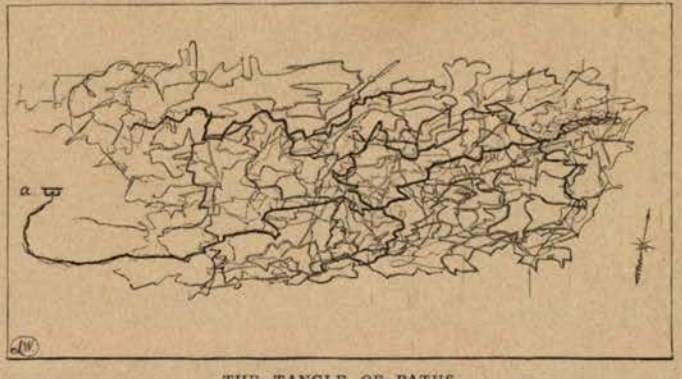
Nevertheless, the tree was disposed to serve me. As I looked at it, thinking of its struggle for life, I was conscious of a warning,—what if I should get lost?



HEAD OF AMERICAN BUFFALO (BISON AMERICANUS).

DRAWN BY JAMES C. BEARD.

I glanced at the sun, that first compass of the first hunters, and rose in my stirrups essaying to single out the direction to the house of Zuloaga. To point the locality of the Spaniard's Fountain of Youth had been as easy. Oh, you say, the path of coming was plain! Yes, but—as I found before the day was done—that path was one of millions winding in and out, never a skein of silk so hopelessly tangled, in and out as impossible of straightening by a novice like me as some sad lives we all have known; paths worn by wolves galloping in howling packs through the South moonlight; deer paths; and paths known only to the unlovely red children of Uncle



THE TANGLE OF PATHS.
a,— House of Zuloaga. *b*.— Estanque.

Sam, who perennially tear down that way for scalps of women and children and the loot of undefended ranchos; paths now along the prairie, now through the chaparral, devious and past following and past finding when once lost as the flight of swallows. Oh, if I did know the right *one* amongst the multiplied zigzag many, and could keep it in shade and shine—keep it truly against the tempting promises of this and that other so friendly and familiar-looking, then doubtless I could make the house. Not caring to make the trial, or to be put to the necessity of making it, I snatched the rein and gave spur to my willing horse.

The gallop was over a great *pastura*, one of the sheep-ranges of our little guide. I did not like the life of the lad,—following the flock as he does day after day, without other companionship except of his dog and donkey, must be lonesome,—yet it is not altogether void of charm. The glories of the enchanter Distance are about him everywhere. If from grasses crinkling under foot, and dwarfed

A MAGUEY FIELD.

trees scarce vigorous enough to cover their nakedness with the suggestion of foliage, he gazes off over them all, who ever saw a horizon with a span so very, very wide? If he looks higher to the sky, nay into it, how the blue inverted bowl widens and deepens as the clear eye shears on, on, through depths to other depths immeasurable! And looking, lo! out of them, by some deft magic,—out of the remove of horizon or the added depths of sky, illusions most likely of atmosphere absolutely purified, or out of them all, it may be,—the Enchanter evolves for me all the effects of space. Did it the same for him? And did he feel them as I did?

We came at length to a body of water, in the Mexican, an *estanque;* in English, a pond. Off a little way a herd of sheep and goats,

thousands in number, having slaked their thirst, were wending slowly to fresh feeding-grounds. A man, joint keeper with our guide, sat by the shore preparing his humble breakfast. Then I knew how the pond made life possible out so far in the afflicted land. The radius of the migration of herd and herdsmen might be wide enough to take in the mountain showing off to our right, like a dab of purple pigment. Whatever its boundary, however, this was its center—this rippling sheet, clear and bright enough to live in my memory another Diamond of the Desert.

While the horses drank, and some of the more careful *rancheros* refilled the water-gourds they habitually carried at their saddle-bows, Don Miguel and the colonel interviewed the herdsmen, whose replies were very satisfactory. Our game had spent the night in the vicinity; the water the other side of the pond was muddy with their wading; he had even made fires to drive them away, and they left about sunup, going toward the mountains.

"You see the trees yonder?" he said; "well, two bulls were there not an hour ago, fighting; they may be there now. *Quien sabe, señores?*"

"It is but a minute's ride—shall we go?" said Don Miguel to the colonel. The latter called to me; next moment we were off, leaving the party to follow as they severally made ready.

I remember yet the excitement of that ride, the eagerness and expectancy with which we neared the knot of trees, our dash through, pistol in hand. In quiet hours I hear the shout with which the colonel brought us together. In an opening scarce twenty yards square lay a dying bull. He was of prodigious girth, and covered head and shoulders with a coat of sunburnt hair to shame a lion. Long, tangled locks, matted with mud and burs, swathed his forelegs down to the hoofs. The ponderous head of the brute rested helplessly upon the rotting trunk of a palm-tree; the tongue hung from his bloody lips; his eyes were dim, and his breath came and went in mighty gasps. The death-wound was in his flank, a horrible sickening rent. The earth all about bore witness to the fury of the duel. Long time he confronted his foe, and held him with locked horns; at last, he slipped his guard—that broad forehead with its crown of Jove-like curls—and was lost. Who could doubt that the victor was worth pursuit?

We helped the unfortunate to a speedier death, and lingered to observe him. His travels had been far, beginning doubtless up

"In the land of the Dakotah,"

whence winter drove him with all his herd down the murky Missouri. On the Platte somewhere he passed the second summer; then, from the hunting of the Sioux and their fierce kinsmen, he escaped into Colorado; after a year of rest, in search of better pastures, he pushed southward again, lingering in the fields about the head-waters of the Arkansas; there the bold riders of the Comanche found him; breaking from them, he disappeared for a time in the bleak wilderness called The Staked Plains; thence to the Rio Grande, and across into Chihuahua, the pursuer still at his heels; and now there was an end of travel and persecution. As we returned from the chase, I saw him again, lying where we found him, a banquet for the whimpering wolves. Already he was despoiled of his tongue.

The incident, as may be thought, whetted the ardor of the party to the sharpest edge. A wide interval stretched between us and the mountain toward which the game had disappeared; in some of the long swales ahead we knew they were feeding; possibly we might strike them before noon; nobody felt tired. Santos rode forward at a canter; we followed in a body, saying little, but never so observant. Two more miles were put behind. Suddenly, as the *mozo* was making the ascent of a long up-grade, he stopped, and, turning in his saddle and pointing forward, shouted: "*Ola, los bufalos!*"

Not a man but felt a great heart-beat and a thrill which shocked him from head to foot. As at command, we raised the guns, lying across the saddles before us. As at command, too, we all broke into a gallop. Santos, like a sensible fellow, came back to meet us.

"Where are they?" everybody asked in a breath.

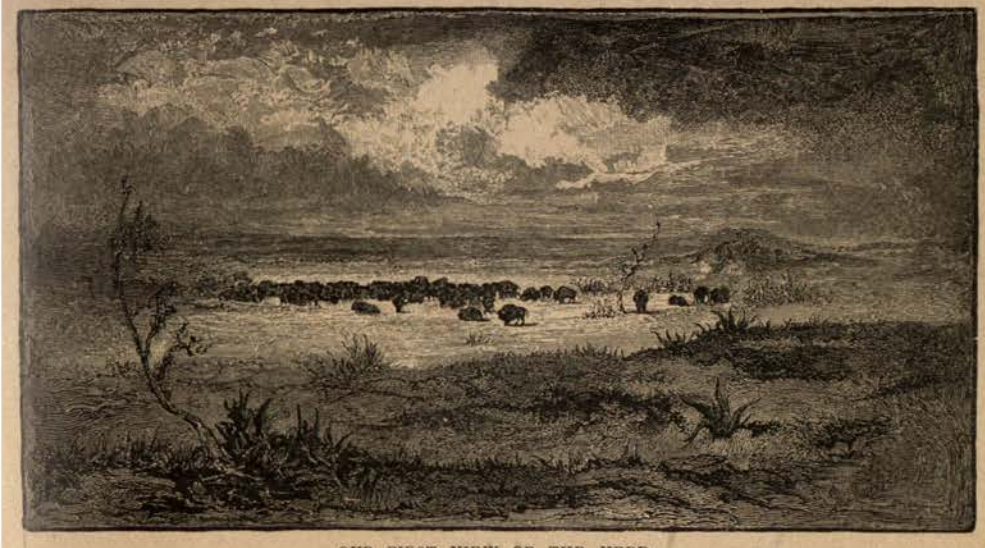
"Just over the hill," he answered, suppressing his excitement.

"Are there many of them?" I asked.

"*Caramba, señor!* We cannot kill them all before night."

We gained the top of the grade, and there they were—not a quarter of a mile away, grazing slowly onward—*los demonios del Norte.*

To the left, under a well-grown tree, I caught sight of one, solemn, sedate, magnificent in proportion, magnificently draped in



OUR FIRST VIEW OF THE HERD.

flying fur. He alone kept his place motionless and with full front toward us, the perfect picture of confidence, self-collection, and power of toughened thews in wakeful repose. In every flock of living things there is a sentinel who watches, a philosopher who thinks, a law-maker who ordains, a king who governs; and there they were all in one—and more, he was the victor of the morning's duel. I knew it all with the certainty of intuition.

The exceeding peacefulness of the scene was not lost on me, and the monitor of the low voice did some whispering; but—my blood was running races. The heart was beating in my throat, and the hot parch of the hunter's fever was on my tongue. Pity there is no gauge for the measurement of a man's excitement of spirit; something of the kind should be our next great gift from the wiseacres; and then, if the invention should happily be simple of reference and easy of portage like a pencil or a knife, we could have with us always a doctor to save us from apoplexies, and a guardian to say stop at that point in our pleasures where conscience is in the habit of obtruding, like the ghost at the banquet.

We had no thought of strategy—scattering, flanking, heading off had no places in our heads, and without an inquiry from us the wind continued to blow as it listed. A common impulse seized every man and communicated to every horse. A shout, some fierce gouging with rowels, and away we dashed pell-mell, guns in hand,

Don Miguel in the lead. The startled herd, executing a volt to the rear, stood a moment at bay. The king under the tree shook his crowned head, and viewed us askance. Ha! ha! was he scared? Or, like a veteran general, was he coolly counting the odds before resolving on battle? If, at a signal, his army had closed *en masse* and charged us horns down, what a hurry-scurrying rearward there would have been on our part! But no—he had heard the whoop of assault before, and knew all its significance. The pause was from curiosity, as natural to his kind as to a high-bred lady. We heard his bellow, ragged as the mot of a Mexican trumpet; then he went right-about; whereat there was a general stampede—a blind *sauve qui peut*, which, interpreted literally, means, may the devil take the hindmost. Away they went, all alike, the king forgetful of his dignity, and all the queens for once at least self-dependent.

Now, if the reader will resolve a buffalo into a machine and make study of his locomotive capacities, it will be seen he was not made for speed. He is too weak in the hind-quarters, too ponderous in the fore; and as if the fatted hump on his shoulder were not a sufficient handicap of the poor brute, Nature fashioned his head after the model of a pork-barrel, and hung it so low as to be directly in the way of his forefeet—the very reverse of a horse or a deer. *A fortiori*, as the lawyers are so fond of saying, he does not leap when in flight, but rolls and plunges, like a porpoise at play. In short, there would have been shame everlasting in the house of Zuloaga if our mustangs, outfliers of the desert winds, had failed to overtake the lumbering fugitives in less than a half mile.

I do not know what my companions did—a quick concentrating of self seized me, insomuch that I became to the world else the merest husk of a purpose; the circumstances of the charge, those the eye catches and those the ear hears, looks, actions, words, yell; even the stirring rataplan of the horses' drumming hoofs and the deep bass earth-rumble of the game in multitudinous flight—all failed my perception; for as we drew near the chase one straggler claimed my attention—a heifer, clean built and clean of hide. She was running freely, and could have made better speed but for the slower hulks in her way. I had a thought that she might make better meat than the bigger specimens, and yet another, she might be more easily killed; and to kill her I bent every faculty.

NOW, FIRE!

The mustang caught the spur; forward—close—closer—by bending in the saddle I could have laid hand on my prey; then, fully conscious that she was singled out, how she struggled to get away! How the muscles of her flanks swelled and knotted in desperate exertion! The time came to use my Winchester. I selected the place to shoot at, just behind the shoulder, and brought the rifle down. Goodness! I was left of the game, when, being right-handed, I should have gone to the right. Three times I tried to get aim, but in vain. I laid the gun across the saddle, and drew my pistol—a Smith & Wesson, the best of revolvers then, yet not near so good as now; for that I was in place. Forward again, and closer in—closer—now, fire! The bullet lodged in the shoulder. Again, and in the heart; hurrah! My horse shied; the rifle fell to the ground; I barely escaped tumbling after; the victim moaned, staggered, stumbled, fell. Aye, count me *one;* and, better yet, count me the FIRST ONE!

Upon coming to,—observe all the words imply,—I was dismounted, and in the act of picking up my gun. The conduct of man was never more purely instinctive than mine had been throughout. I make the confession without shame, for I am not of those who believe thought must govern and direct what all we do, otherwise there is no credit. In cases of peril bullet-swift, to wait on reflection is to die. Instinct moves us; we obey, and live. Thought implies conditions, and a final judgment upon them; instinct implies instant action—something dull men are incapable of.

Let me pass the pride and happiness of that triumphant moment. The fisherman who has landed the traditional trout of a famous brook, or a ten-pound golden salmon from the golden beds of the Kankakee, can tell you my feelings; and to enable a hunter to interpret for me, it is only required that he should have bagged a wild goose, flying full-quilled from the Arctics.

The mustang was at last reduced to quiet; then I looked about. The huntsmen and the herd were out of sight in a trough of the land ahead; yells and frequent shots signaled their whereabouts. Not another carcass was to be seen; I had made the first capture; what if it should be the only one? While so thinking,—the faintest semblance of a selfish wish lurking under the reflection,—suddenly the noise ceased. Strange! Something had certainly occurred. I swung into the saddle; then up from the hollow rode a *ranchero*, coming to speak to me, I supposed; he went by like a ricochetting shot. Others appeared; the same haste possessed them, only they shouted: "*Priésa, señor! Los Indios, los Indios!*" ("Make haste, sir! Indians, Indians!")

Ah, the cursed Apaches!

The interruption was not an agreeable one; in fact, the effect was decidedly chilling; yet I managed to control myself, and ride forward. The last of the *rancheros* passed in flight; only the colonel, Don Miguel, his friends, and Santos and Teodora, remained.

"What's up now?"

The colonel answered coolly:

"The fellows say they came upon Indians in the grass down yonder. I think they are lying."

Don Miguel shrugged his shoulders nearly to the top of his head, and fairly hissed:

"It is nothing, sir," with an expression of contempt without an equivalent in English.

Santos touched his hat, indicating a wish to speak.

"What is it?" I asked him.

"There are no Indians there."

"No?"

"I stopped one of the men long enough to have him show me where the ambush was, and ——" he laughed heartily.

"Well?" I said, impatiently.

"And the buffaloes had run right over the place."

We looked at each other curiously. Don Miguel suggested we go see for ourselves, and the colonel supported him with a round declaration that they had taken eight or ten good fat cows, and he didn't like to run away from them to accommodate anybody, much less a thieving Apache. A reconnoissance was determined upon.

We rode into the hollow and up it, cautiously following the trail of the herd.

"Hist!" cried Santos, a little in advance. "Look there!"

We looked, and were startled. Not twenty yards away stood a sorrel pony rudely housed in Indian style. At sight of us it raised its head and whinnied piteously. Santos went to it, and stooped to catch the lariat about its neck.

"*Jesu Christo!*" he yelled as if shot. I thought he would roll out of his saddle.

"For love of God, gentlemen, come and see," he next exclaimed.

We stood not upon the order of going.

"*Caramba!*" said Don Miguel, reining back.

Then the colonel blew a long whistle of disgust, as well he might. An Indian warrior was lying face downward in the grass at the fore-feet of the pony—*dead!* The stampede of the *rancheros* was explained.

A worn knife, butcher's pattern; a hatchet, such as plasterers use; a redwood bow, short but broad, and variously painted on the back; a quiver of arrows; a lance, of the Mexican sort; a dirty clay-pipe, in a dirty bag of raw tobacco—were the assets of the dead man.

In the division of spoils, my friend the colonel took two feathers found in the scalp-lock, indicative, as he was pleased to believe, of

the high rank of the deceased. A pair of moccasins, taken from the saddle, fell to me; they were unworn, and soft as a castor glove. I have them yet, and keep them because they were beaded by the warrior's love, the daughter of an arrow-maker who lives in a painted tepee off over the Sierras, by the loud-singing, but lonely, Gila. A visitor now and then comes and casts a doubt upon the tale of the moccasins; but he always leaves me in disfavor.

We agreed to attribute the end of the savage to ugliness, complicated with original sin. When the shepherds were told about him, they turned pale and crossed themselves. They knew why he was in wait where death found him, mercifully for them.

It remains to say the discovery finished the hunt.

The Indian's pony, seven superb buffalo hides, and any amount of meat, were our trophies. The bivouac by the *estanque* that night was savory with the smell of roasting joints, and next day, when we bade adieu to Don Miguel and his friends at the door of the house of Zuloaga, all the patios were beautiful with festoonery, which, at the end of a week, was taken down, weighed, and divided. No one ever tasted better *carne seca*.

THE NORTH AMERICAN CERVIDÆ.

GEORGE BIRD GRINNELL, PH. D.

THE deer family includes the most important of our large game animals. Deer, of one species or another, are found throughout the whole of North America, from within the Arctic circle south to Mexico. They are most numerous in the northern United States, where the Arctic forms and those inhabiting more temperate regions overlap, and here two of the most magnificent representatives of the family—the moose and the elk—are found. The value of the deer to the aborigines of this continent can scarcely be over-estimated. In many sections of country, the natives formerly depended for animal food almost wholly upon the deer at certain seasons; and at the present day the Esquimaux rely, for several months of the year, entirely upon the reindeer for subsistence. Until some time after the settlement of this country by the whites, the clothing of the natives was manufactured chiefly from deer-skins. Shirts, leggings, and moccasins were and are made from the dressed skins of the red, the mule, and the black-tail deer; while the coarser and heavier hides of the moose and elk were used for covering lodges, for robes and blankets, and for moccasins, as well as in the manufacture of ropes and lines and for a variety of other purposes. At present, blankets and cheap cotton cloths have, to a considerable extent taken the place of buckskin in the manufacture of Indian garments. But to-day, the clothing of the Innuit is made almost entirely from the skins of the reindeer, dressed with the hair on, the garments worn next to the skin being made from the summer hides, on which the hair is short and fine, and the outer ones from skins taken later in the season, and therefore coarser.

Six unquestioned species of deer inhabit North America. These are the moose (*Alce Americana*—Jard.), the barren ground caribou (*Rangifer Grœnlandicus*—Baird), the elk (*Cervus Canadensis*—Erxleben), the mule deer (*Cariacus macrotis* (Say) Gray), the black-tail deer (*Cariacus Columbianus* (Rich.) Gray), and the Virginia deer (*Cariacus Virginianus* (Bodd.) Gray). Beside these, there are several geographical races or varieties, the zoölogical status of some of which is, however, doubtful. The woodland caribou is a distinct race of the Arctic reindeer, and the California form of the mule deer appears also to be a good variety. In the several supposed races of *Cariacus Virginianus*, such as *macrurus*, *leucurus*, *Mexicanus*, and *Couesi*, size appears to be the distinguishing varietal characteristic. In the six species already mentioned, we have every variety of size and form, from the gigantic moose, which is taller than the largest horse, down to the little dwarf deer of Arizona, which at the withers measures scarcely thirty-two inches in height. Not less is the difference in grace and beauty of form between the various North American members of this family. On the one hand stands the Virginia deer, whose very name is symbolical of elegance and beauty of motion; on the other, the moose, huge, ungainly, and, in most of its movements, awkward. With a head more hideous than that of a mule, a neck so short that it cannot reach the ground, legs of immense length, and huge horns shaped like coal shovels, it is as far as possible from being graceful or attractive. But regard it with the hunter's eye, as, when startled, it dashes along with swinging trot, crashing through the forest and making the dead sticks snap and fly in its impetuous career, taking in its stride without any apparent effort the great fallen logs that lie in its course, and in a moment disappearing shadow-like among the bare tree trunks in the distance, and it will be acknowledged that, if not a graceful, it is at least a grand animal. Most of the North American deer, however, are beautiful and graceful.

Before speaking in detail of the various species of *Cervidæ* found in North America, it is desirable to explain just what a deer is.

Roughly speaking, all hoofed animals are contained in the order *Ungulata*. This division of the *Mammalia* includes, therefore, the formerly accepted orders *Pachydermata*, *Ruminantia*, and *Solidungula*, which have been discarded by modern naturalists. The group is a very large one, its families being the horses, tapirs, rhinoceroses,

hippopotami, hogs, camels, musk-deer, deer, giraffe, and the *Bovidæ*, in which stand the cattle, sheep, and antelopes. The order is divided into *Perrissodactyla* and *Artiodactyla*, or odd and even toed ungulates. The distinction between the living representatives of these two groups is well marked, and the division is a convenient one; but it is probable that the future discovery of fossil forms of ungulates will show that the artiodactyles and perrissodactyles grade into one another, so that it will be impossible accurately to define the terms. Although these groups are loosely called odd-toed and even-toed ungulates, the fundamental difference between them does not consist in the number of digits on the foot, but in the fact that in the perrissodactyles the development of the foot takes place in the line of the middle toe, which is usually symmetrical in itself, whereas in the artiodactyles the third and fourth digits share equally in this development, and together form a symmetrical pair.

To make this clear, it is perhaps necessary to go a little further, and, by explaining the manner of progression of two of the more familiar forms of the order, to give an idea of the construction of these two types of ungulate foot. The horse is a perrissodactyle, having a single visible toe, which is symmetrical in itself. He walks upon the extremity of this toe, the hoof corresponding to the nail of the third or middle finger in man. Comparing it with the human hand and arm, it will be seen that the fore leg of the horse, from the hoof to the fetlock joint, corresponds to the middle finger, and the portion between the fetlock and what is usually termed the knee, to the middle metacarpal—the bone which lies between the knuckle of the third finger and the wrist. Following the leg up toward the body, it appears that the "knee" of the horse is really its wrist; that the elbow is high up close to the body, while the humerus—the bone between the elbow and the shoulder—lies within the body, and out of sight. In the hind leg a similar sequence will be found. The animal walks on the toe corresponding to the third digit in the human foot, the hock is the ankle, while the true knee is close to the body. The horse, therefore, supports his weight on the third digit of each foot. His thumb and little finger, and the first and fifth digits of the foot, have been wholly lost; but in the fore and hind foot the metacarpals and metatarsals of the second and fourth digits still persist in the form of the slender, sharp-pointed bones, called by horse-

men side-bones or splints, which lie hidden beneath the skin, close to the large third digit, metacarpal or metatarsal.

Now the ox is an artiodactyle. His weight is supported on the tips of two toes, which represent the third and fourth digits of the human hand, or foot, as the case may be. The first has been wholly lost, but the second and fifth are represented by the two little supplementary hooflets behind and above the main hoofs. The functional hoofs are symmetrical in pairs, the third and fourth digits being equally developed, and taking an equal part in the constitution of the foot and in performing its work. The metacarpals and metatarsals of the third and fourth digits are equally developed, but are anchylosed together, so that they appear like a single bone, with, however, two distinct articular surfaces at their lower ends to support the phalanges of the digits. The *Cervidæ* belong to the *Artiodactyla*, and their feet are constructed upon the same plan as those of the ox. They are also ruminants, and belong in a subdivision of the *Artiodactyla* styled *Pecora*, to which belong the *Camelopardidæ* (giraffes) and *Bovidæ* (cattle, sheep, and antelopes).

All the *Cervidæ* have horns, and these alone are enough to distinguish this family from any other. The horns of the *Bovidæ* are permanent osseous outgrowths from the frontal bone of the skull, and are enclosed in a horny epidermic sheath, which is usually persistent, a single species —our prong-horn antelope — being the only exception to the rule. These bony outgrowths, which form the core of the horn, are usually permeated by large air sinuses, and from this fact the group have been called *Cavicornia* (hollow-horned). In the deer family, however, the horns are constructed on quite a different plan. They are still outgrowths of bone from the frontals, but the outer epidermic sheath encloses them for a short time only, and, as soon as their growth is completed, is shed. The perfect horn is now mere dead bone. It remains firmly attached to the skull for a few months, and then drops off, to be renewed again the following year. These horns are, in fact, true bones, and in their constitution do not differ materially from the other bones of the body.

Their method of growth is as follows: From each of the frontal bones there arises a short, stout process, growing outward and upward, forming what is called the pedicel. This pedicel is covered

with ordinary hairy skin, except upon the upper flat circular surface of its extremity, on which the horn of the preceding year was supported. Here the skin is naked and black. In the spring, usually about May 1, the time varying somewhat in the different species, and even in different individuals of the same species, this flat surface becomes convex, gradually swells outward, becomes longer, and soon takes the shape of a short spike. At first, it is straight and swollen and is shaped somewhat like a cucumber. It is now little more than a mass of coagulated blood inclosed in a sack of thin skin, which is covered by a coat of fine brown hair called "velvet," and during the first part of its growth there is but little trace of bony structure apparent in it. The horn is soft to the touch, and may be somewhat compressed in the hand or bent a little in any direction. It is hot and feverish, too, and the pulsation of the arteries which supply it with blood may be felt. It is also extremely sensitive and tender, and the deer is extremely careful to avoid striking it against the trees or undergrowth near which he may pass.

When the point is reached at which the first tine is to be put off, the extremity of the growing horn becomes somewhat flattened from side to side and then divides, the tine at first being quite small, and increasing in length much more gradually than the beam. The same thing takes place with each of the succeeding branches, so that the beam and all the tines attain their full length at the same time. During the whole period of their growth, the horns are abundantly supplied with blood-vessels, three distinct sets of arteries, according to Caton, passing up through and without the pedicel. The horns grow with very great rapidity, usually attaining their full size in about three months. Huxley, in speaking of this marvelously rapid growth, refers to a pair of antlers, weighing seventy-two pounds, which were produced in ten weeks. As might be imagined, the production of such a mass of osseous tissue in so short a time is a severe drain upon the animal's system, and in most species the males at this time become very thin and weak. During the growth of the horn a circular notched and jagged ridge makes its appearance at the base of the horn just above the pedicel. This "burr" serves in a measure to protect the blood-vessels which pass along beneath the skin of the pedicel, and these take their way through it and between its projections, and thence along the channels in the surface of the

horn beneath the periosteum—the membrane which incases the living bone.

The horns reach their full size in August, and, from being at first very soft and afterward spongy, have at length become quite hard. They are, however, still covered with the "velvet," and beneath this the blood continues to circulate, but now more slowly than at any time since the horn began to grow. The time at which the horn becomes fit for use as a weapon of offense or defense varies slightly in the different species of our deer, but is usually about September 1. The animal's head now appears to trouble him, and to be irritated like a healing wound, and he rubs his horns violently in the bushes or against the branches and trunks of trees. The tender "velvet" is thus torn off and hangs in bleeding strips about his horns and head, but he continues to rub for several days, until at length the antlers are quite free from skin, their tips white and polished, and the inequalities about the burr filled with finely crushed fragments of bark. He is then ready for the rutting season, which immediately ensues.

The horn is now dead, and at its connection with the skull—the extremity of the pedicel—absorption begins to take place, and in the course of four or five months the attachment to the frontal is so weakened that the horn drops off of its own weight. The end of the pedicel bleeds a little at first, but almost at once heals over, and until the following spring is covered with the black skin already mentioned.

As a rule, these weapons are borne only by the male deer; but the female caribou always has small horns, and in very rare instances the female Virginia deer has been killed with a single spike, or a pair of straight, short, and scarcely branched horns. The horns of all our North American deer become fit for service in September, and they are shed at various times from December to March.

From what has already been said, it will be seen that a deer is an artiodactyle ruminating ungulate, with solid, deciduous horns.

The arrangement of the teeth in this family is as follows: Incisors, $\frac{0}{8}$; canines, $\frac{1-1}{0-0}$, or wanting; molars, $\frac{6-6}{6-6}$. Canines are said to be always wanting in the female, but this is by no means true of all species, for they are usually present in the female of *Cervus Canadensis*, and I have also detected small ones occasionally in *Cariacus Columbianus*.

The keenness of the deer's olfactories has become proverbial, and the experienced hunter, when starting out, always first satisfies himself as to the direction of the wind; for a deer, when its nose has told it that a man is in the neighborhood, waits for no more definite information on the subject, does not seek to learn just where he is, nor how far off, but makes the best of its way from the spot. All deer are alike in possessing this keen power of scent and in the readiness with which they take to flight when warned by this sense.

From the very nature of the case, the eyes are less to be relied on to warn the animal of danger. We are accustomed to hear men say that the deer's vision is defective, and even so good an authority as Judge Caton makes this statement in his excellent work on this group. There seems to be no sufficient reason for supposing this to be the case. It is true that deer will pass close by a man sitting in the woods without seeing him, provided only he remains perfectly motionless; but this does not necessarily imply any imperfection of vision. Other mammals and birds will do precisely the same thing. The deer would not walk up to a man standing or sitting in the middle of a meadow, and where there were no surrounding objects. A man, if motionless, in the woods, when clothed in hunter's garb, very closely resembles a stump or a stick. The deer is not especially familiar with the human form and does not recognize in it anything alarming, nor, since it is without motion, does it distinguish it from any of the many other quiescent objects over which its eye passes, and which it has no especial reason for closely examining. Its experience has taught it that these quiescent objects are not dangerous, and it therefore pays no attention to them unless they are markedly different in appearance from those to which its eye is accustomed. A white tent or a red shirt will, however, at once catch a deer's eye, because these are unusual objects. Anything that moves is observed at once, and, unless it is recognized as something commonly seen and not dangerous, is avoided. The deer has no friends; the hand of man and of the larger animals is against him; and the fact that an object moves, and hence has life, is to him *primâ facie* evidence that it is an enemy, and so, on the slightest hint of danger, he takes to his heels. Like other wild creatures, the deer seems to recognize danger only in life, and life only in motion.

The Moose (*Alce Americana*, Jard.).

The moose is by far the largest of the *Cervidæ*, and considerably exceeds a horse in height, often measuring six feet or more at the withers. This great height is, in a measure, due to the extreme length of the legs; but the long mane-like hairs of the neck, which are naturally slightly raised, also tend to make the animal appear taller than it really is. When the moose is at his best,—that is, in the autumn,—he is black, with tan legs and muzzle, and grayish belly and flanks, but later in the season the coat fades to a dark grizzled gray. The tips of the hairs are black, becoming pale gray about half-way toward the roots, and then changing to dull white. The young, when first born, are bright bay, sometimes with faint indications of spots on the sides. These markings are soon lost, however, and by September the color of the body is brownish gray, the head and legs being reddish.

The horns of the moose are broadly palmate, being sometimes sixteen inches across their widest part, and their spread is often five feet or more. The yearling bull has only a short spike; the horns of a two-year-old, now before me, are ten inches long, and a brow antler four inches in length springs from the beam six inches above the burr. The third year a small palm is developed, and for several seasons thereafter the horns increase in size. The head of this species is a marvel of ugliness, the great rounded nose, or *mouffle*, and the overhanging square-cut upper lip making it appear indescribably heavy and coarse. The neck is very short, and this fact, in connection with the very long legs, renders it difficult, if not impossible, for the moose to graze on level ground. The young are brought forth in May, and are usually two in number. A calf moose is a most grotesque and, at the same time, a most interesting little animal. Years ago, in the valley of the Upper Yellowstone, a tame one, which had been captured by the sons of a settler there, came under my notice. Late in the month of August it was as large as a good-sized calf, and was strong and fat. It was quite as much at home about the ranche as one of the dogs, and manifested not the slightest fear. The greater part of its time was spent among the willow brush down by the river-bank; but at the whistle, if it hap-

A MOOSE FIGHT.

DRAWN BY HENRY SANDHAM.

pened to be hungry, it would come trotting swiftly up to the house. The boys who owned it rather complained because it would only obey the summons when it wanted a drink of milk, and said that at other times they were obliged to go down to the willows, and drive it up before them. It had been caught only two months before, and so, although it browsed to some extent on the undergrowth near the water, it still depended for subsistence mainly on cow's milk. When the pail containing this was placed on the ground, the moose had a hard struggle to reach it. He would straddle the pail with his fore legs, and thus bring his mouth to the level of the liquid. As this sunk lower, his feet would gradually spread farther and farther apart, until sometimes I would feel anxious lest he should split in two, and it was always a question whether he would be able to recover his upright position without accident, but he never seemed to find the slightest difficulty in doing this by means of an awkward bound, which brought his feet close together again.

In the United States, moose are still found in small numbers in northern Maine, but are apparently extinct in the Adirondack region of New York, where they were once of frequent occurrence. In Michigan and Wisconsin, a few probably still exist; and they are more numerous in the tamarack swamps of Minnesota. Proceeding westward, no country adapted to this species is found until the main range of the Rocky Mountains is reached. In western Montana, northern Wyoming and Idaho, Washington, and portions of Oregon they are moderately abundant, though less so than the other species of *Cervidæ* found in this region. They are often killed, however; but the character of the country which they most affect is so difficult that the hunter is likely to neglect the moose, preferring the less laborious task of stalking the elk or the mule-deer, or even the leg-tiring climb after mountain sheep. But, as the Western country settles up, the fate of the moose there will be what it has been in New York and other Eastern States, and this superb creature will be known only in history. Its one hope of preservation from extinction lies in the proper policing of the Yellowstone National Park and the protection of its game, and here, if proper steps are taken, it may be preserved for all time.

Since it is difficult or impossible for the moose to crop the grass on level ground, a large portion of its food is arboreous. In the

spring, it feeds on the young and tender shoots of the birch, the maples, poplar, and mountain ash, as well as those of some coniferous trees; during the summer, the willows and the water-lilies and other aquatic plants form a considerable portion of its food; and in winter, with its sharp incisors it nips the twigs and strips off the bark from different shrubs and trees.

The horns of the moose start in April and become hard early in September. The rutting season at once follows, lasting until November. At the beginning of this season the bulls are at their best, and then is the time to hunt them. Later, the flesh becomes somewhat strong, and, before the rut is over, the animals have become thin, and are scarcely fit for food.

It seems a pity that the moose cannot be domesticated. Experience has shown that they are readily tamed, and that they can be broken to harness without much difficulty. The elk of Europe was formerly used to draw sledges in Sweden, and in America the moose has occasionally been used as a draught animal, and has shown itself strong and tireless. It has not been practicable, however, to use it during the rutting season.

In winter, when the snows lie deep, and traveling becomes difficult, the moose "yard up," as it is called; that is, they collect in localities where food is abundant, and remain there until spring, or until they are driven off by hunters. This species is less gregarious than most deer, and it is somewhat unusual to see more than four or five together, and these are usually a single family of old and young.

The Caribou (*Rangifer Grœnlandicus*, Baird).

The older naturalists described the two forms of American caribou under different specific names, and regarded both as different from the reindeer of the Old World. At present, however, the best authorities consider the woodland caribou (*R. Grœnlandicus tarandus*), which is the common Southern form, as a fairly good geographical race of the barren ground species, and look upon the circumpolar forms as identical.

The head of the caribou, while less coarse than that of the moose, is far from presenting the delicate and graceful outlines seen in the

genera *Cervus* and *Cariacus*. It is blunt and rather heavy, shaped, in fact, somewhat like that of a cow, though less wide across the forehead. The form is much heavier and stouter than that of most deer. During the summer, this species is dark brown on the body and legs, becoming paler, and almost white on the belly and rump. The head and neck are white at all seasons, and in winter a long beard or mane depends from the latter. Late in the autumn, the hair throughout becomes longer, and the color of the animal changes to a paler cast, so that it is a faded gray or soiled white, somewhat shaded with brownish on the legs and flanks. The young are at first spotted, but less pronouncedly so than is the case with most of our deer. The arctic form is much the smaller of the two, an adult male weighing, after having been eviscerated, only from ninety to one hundred and thirty pounds. This would give a live weight of from one hundred and forty to two hundred pounds. The woodland form, on the other hand, is, with the exception of the moose and elk, the largest of the North American deer. A good-sized male will stand four feet high at the withers, and may weigh from four hundred to five hundred and fifty pounds.

The horns of the caribou are remarkably large and heavy for the size of the animal, and this genus is the only one in which both sexes commonly produce these outgrowths. Those of the female are usually small, slender, and but slightly palmate, and bear two or three small tines. In the male, however, they are long, branching and irregular, most of the tines being widely expanded from above downward toward their extremities, and the palmate portion terminating at its margin in half a dozen short points. The antlers vary widely in the size and shape of their branchings, and do not seem to have any common form. Those of the arctic reindeer are nearly twice the actual size of the woodland race, while the animal which carries them is only about half as large.

The caribou's foot is broad and spreading, and the supplementary hooflets, or dew-claws, are large, the whole being admirably adapted for supporting the animal in its passage through marshes or over the snow. The thin, horny shell which forms the border of the hoof also serves it well when traveling on the ice. The representatives of the second and fourth digits contribute something to the support of the animal's weight, and are always more or less worn and abraded

BARREN-GROUND CARIBOU.

on their inferior surfaces. When the animal trots swiftly, these dew-claws strike against one another with a loud, clattering noise.

The food of this species consists principally of the so-called reindeer moss (*Cladonia rangiferina*), which, in winter, they reach by scraping away the snow with their hoofs; but they also eat other mosses and lichens which grow upon the trees or on the barrens which they frequent. During the summer they feed on grasses and the tender shoots of shrubs, but do not appear at any season to strip the saplings of their bark as do the moose. The young are brought forth in May.

As to the habits of the barren-ground caribou we are not well informed, for the species is known only to arctic explorers and to the servants of the Hudson Bay Company, in British America. Richardson's accounts of it are, however, quite full, and from these it appears that this form does not differ materially from its woodland relative, except in the range of country which it inhabits, and in the greater extent and regularity of its migrations. The woodland caribou is much more southern in habitat, and frequents especially the forests of British America, occurring regularly in Maine and perhaps in the Rocky Mountain region of the United States along the border. The barren-ground deer, on the other hand, occupies the wide treeless plains about the Arctic Sea, where

the only other large ruminant is the musk-sheep, only retiring southward to the forest belt in winter.

The migration of the caribou is a notable feature in its habits, and the journeys which it performs are longer and more regular than those of any other species of North American *Cervidæ.* Others, as the elk *(Cervus Canadensis)* and the mule-deer *(Cariacus macrotis)*, change from one feeding ground to another at the approach of winter and again in spring; but such changes do not usually involve journeys of much more than seventy-five or a hundred miles, while those of the caribou are far more extended. In the woodland caribou, the migration seems to be little more than a mere restlessness, a desire to keep moving, or a natural change from a winter feeding ground to a summer one and back again; but, in the barren-ground form, the journeys take place with so much regularity and are on such a large scale that they have attracted the attention of all travelers who have had opportunities of observing them. The last-named deer spend the winter along the borders of the low forests near the arctic circle, and at the approach of spring begin to travel northward toward the shores of the Arctic sea, which they reach early in May, the females preceding the males. Here the young are born, and the summer is spent. The rutting season is in September, and soon afterward the herds retrace their steps southward. In the island of Newfoundland, however, where the woodland form is the only one found, a general movement of these deer takes place in April, at which time they leave the lowlands on which they have passed the winter, and where food is at that season more easily obtained, and travel in a northwesterly direction toward the higher mountainous country. Here they remain during the summer, and at the approach of cold weather a retrograde movement ensues.

Caribou are notorious for being great travelers and almost constantly on the move. Their powers of scent are very keen, and when much hunted they are extremely wary and difficult of approach, and if once started it is impossible to come up with them, for they do not cease their flight until they have put a long distance between themselves and the danger which threatened. The gait of the caribou is a long, swift trot. It never gallops, though when first frightened, it may make a few startled bounds. This tireless trot, it is said, can be kept up for many hours.

The Elk (*Cervus Canadensis*, Erxleben).

The elk, or, as it is sometimes called, the wapiti, is a near relative of the red deer of Europe, but is a much larger animal. At the withers it measures about five feet in height, being thus about as tall as a horse. The females are somewhat smaller. The shape of the elk is much like that of the common deer, being graceful, and having none of the coarseness and awkwardness of the moose and caribou. The head is small and finely formed, the legs slender and delicate, and the whole shape strong, yet elegant. During the greater portion of the year the color of the elk is a yellowish brown, of a somewhat varying shade, the head, neck, legs, and belly being a dark wood brown. I have sometimes killed specimens in autumn so pale that they might fairly be called yellow, and have seen others in the same band which were almost brown. At the approach of winter, the coat becomes darker throughout. On the rump, extending up on the back above the tail, and also down on the inner side of the legs, is a patch of yellowish white, bordered by a stripe of dark brown or black. The tail is extremely short, and is clothed with hair only upon the upper surface and sides. The hair upon the neck is always much longer and coarser than that on the body, and in winter increases in length so as to become really a mane. The elk is provided with quite a heavy coat of short, close wool, which is, however, concealed by the hair, and is only to be observed in spring, when the pelage is shed. The horns of this species, which are only borne by the males, are long, cylindrical, and branching, and are much more nearly straight in the beam than those of any other North American deer. They are usually very symmetrical — though abnormal forms are sometimes seen — and bear on each beam five or more tines, directed forward, inward, and upward. The antler of the bull elk in his second year is a straight spike from ten to eighteen inches long, which is usually bifurcated.

The elk was formerly distributed over the whole of temperate North America, its range having been even more extended than that of the buffalo, and almost as wide as the Virginia deer's. The advance of the settlements has, however, caused its extinction throughout

HEAD OF AMERICAN ELK.

the greater portion of its former habitat, and to-day there is probably only one very circumscribed locality east of the Mississippi River where it is to be found in the feral state. In the dense forests of the lower peninsula of Michigan it is said that a few still exist, but their numbers are becoming less each year, and before long they will all have disappeared. West of the Missouri River, and in the Rocky Mountains, there are regions in which this species is even yet moderately abundant; but it is now impossible to find them anywhere in such numbers as formerly. Less than ten years ago, there were many secluded localities in Colorado, Wyoming, and Montana, where, in the late autumn and winter, these animals would collect in bands numbering thousands of individuals; but at the present day it is unusual to see one hundred together. The hide of the elk has a

commercial value, which makes it sought after by those butchers of the plains called "skin hunters"; and the size and beauty of the animal causes it to be ruthlessly pursued by so-called sportsmen, who are eager to kill, so that, on their return to civilization, they may boast of the slaughter they have made among these graceful denizens of plain and mountain. The same wanton butchery, which has over the greater portion of our country exterminated the buffalo and the moose, is causing the elk in like manner to disappear.

The young are born in May and June, and are at first bright bay in color, profusely spotted with white, after the manner of the common red deer. At the time of the birth of the calves, the females are scattered and the bulls keep by themselves in small companies of two, three, or half a dozen. If in a mountain country, they frequent the highest hills, usually close to the snow line, and do not move about much; while, if on the plains, they spend their time among the thick willow brush along streams. About the first of August, the elk begin to "band up," as the hunters phrase it, and at this time they are to be found in scattering companies, which remain together until the rutting season begins in September. Each male now collects as many cows as possible, and keeps them together, jealously guarding them and driving away any other bulls which may approach. This lasts for a month or more, and during this time the bulls are constantly moving about, looking after the cows that are under their charge, and fighting. Many little groups of bulls, however, will be found without any cows.

After the rut is over, the elk collect in large bands, and at the approach of winter shift from place to place, gradually working toward their winter feeding grounds. These are usually bald hills, which the winds keep swept clear of snow, so that the grass is always exposed. In such situations they spend the winter.

The usual gait of the elk is a long, swift trot, which it can keep up for a great length of time without manifesting fatigue. When greatly frightened they sometimes run, but this pace, while perhaps somewhat faster than the trot, soon tires the animal. This species is killed almost exclusively by still-hunting, though, on the plains, it is not unusual to run them down on horseback. This requires a very good horse and an open, favorable country.

THE MULE-DEER (*Cariacus macrotis* (Say) Gray).

This species equals the common Virginia deer in height, but is more stoutly built, has somewhat shorter legs, and is in all respects a heavier, less graceful animal. The ears are the most striking characteristic of this deer, and from them it has received the name "mule," or the Spanish equivalent *burro*, deer. They are extremely large, being nearly twice as long and wide as those of our common species, and when seen thrown forward, as the animal stands gazing curiously at one, or flapping backward and forward as it runs away, are sure to attract attention. The tail, from which it takes its more common, but incorrectly applied, name, "black tail," is quite unlike that of any other species of our *Cervidæ*. It is short, round, naked beneath, clothed on its upper surface with very short, white hairs, and terminates in a thick brush of longer jet black ones. In summer, the coat of the mule-deer is red, the hairs being short, and so sparsely distributed that the black skin is easily seen through them. There is a triangular patch of white upon the rump, crossing it at, or a little above, the root of the tail. Early in the month of September, the close, thick, winter dress begins to grow, and the summer hairs fall out. The tips of the hairs of this winter pelage are black; and when it first starts, the animal for a short time appears almost black. Later, as the hairs grow longer, the color becomes steel-gray; and toward the end of the winter, when they are longest, and each one shows a greater proportion of white, the coat becomes still paler in cast.

The horns do not bend forward so much as do those of *Cariacus Virginianus*, and each beam of the pair is forked at least once, and the division is so equal that it is difficult to decide whether the anterior branch is the main beam and the posterior a tine, or the reverse. This forking may sometimes occur twice or three times in the same horn.

The mule-deer is found throughout the greater part of the Missouri River region, and thence westward on the plains, in the Rocky Mountains, and in the Sierra Nevadas. It is an inhabitant of rough, broken country, and on the plains is usually only to be found about high buttes, in the bad lands, or where the country is diversified with

HEAD OF MULE-DEER.

rocky ridges dotted here and there with scattering pines or junipers. Its favorite resorts are the *coulées*, gulches, and cañons which so often break up the high table-lands of the central plateau of this continent; but it is as often to be found among the green timber high up on the mountain-side, or, in summer, among the low trees that grow just below the snow-line. It is to such localities as the last named that the bucks resort during the summer, when they are "growing their horns," and when their thin coat of hair affords them little or no protection against the flies.

The young of the mule-deer are born the last of May or early in June. They are two in number, and are prettily spotted like the calf elk, the spots being lost in September, when the summer coat is shed. Just previous to this date, the mother begins to wean her fawns, and hides from them, not permitting them to suckle her. They are, therefore, quite thin in the early autumn, but soon learn to forage for themselves, and by the time that cold weather sets in are fat and in good condition.

The rutting season is in September and October, the "velvet" having been shed from the antlers during the early part of the former month. At the beginning of the rut the bucks are enormously fat, and the flesh at this time is superior to that of any deer with which I am acquainted.

Caton's variety of the mule-deer (*C. macrotis Californicus*) (*Am. Nat.*, X., 464, August, 1876) is distinguished from the ordinary form by a more reddish cast of pelage, and by the presence of a dark line extending down the upper surface of the tail and uniting with the black brush at the tip.

Black-Tail Deer (*Cariacus Columbianus* (Rich) Gray).

The true black-tail deer is intermediate in size between the mule and the common deer. In form and build it more nearly resembles the former, while weighing about as much as the latter. The horns curve forward more decidedly than in *Cariacus macrotis*, but in the forking of the beam it resembles that species. The tail, on the other hand, is more like that of *C. Virginianus*, being broad and flat, though not so long as in that species, and covered throughout with hair. It is white below and black above and on the sides.

In color, the black-tail resembles our common red deer, being bright bay in summer and changing to gray in the winter. The under surface of the head and the belly are white. The changes in the pelage, as regards time and character, are similar to those which take place in the mule-deer.

The range of this species is the most circumscribed of any of our *Cervidæ*. It appears to be confined to a comparatively narrow strip of territory—the mountain ranges of the Pacific coast. There is no record of its capture east of the Sierra Nevada mountains, although a hunter of reliability has informed me that, in an experience of ten years in the Central Rocky Mountain region, he believes that he has killed three deer of this species. Something more definite than a doubtful statement of this kind is required, however, before we can extend the limits of this species beyond those given above. In the Sierra Nevadas, and in the mountains of the Coast Range, the black-tail is abundant, sharing its range to the south with Caton's mule-

deer, and to the north with the caribou and the elk. Its northern limits do not appear to be very definitely known. I have myself met with it as far north on the Pacific coast as latitude 51°, and it may be assumed that it is found many degrees farther to the northward.

The young of this species are usually born in May, and are spotted, and this ornamentation is decidedly more vivid than in the young of the mule-deer and the elk. The spots are more numerous, more regularly arranged in lines, and more sharply defined, than in those species, and thus approach the markings on the young of the common deer.

The black-tail deer is an inhabitant of the dense coniferous forests of the Pacific coast, and appears to delight especially in such tangled solitudes as their dark and damp recesses afford. They are seldom found far from the timber, or from some dense cover into which they can retreat if alarmed. Along the sea-coast, especially to the northward, where they have been but little hunted, they come down frequently to the salt water, for the purpose of feeding upon a species of sea-weed cast up by the waves, and the trails made in their passage up and down the sides of the mountains are often worn a foot or two deep, showing a great amount of travel over them. The Indians of British Columbia kill great numbers of these deer along the water's edge, stealing up within shot in their light canoes, which they paddle noiselessly along, close to the shore. Still hunting in the forest is practiced with success in many localities. Deer are very abundant on the islands and among the mountains of this coast, and as they are not often disturbed they are very unsuspicious, and will frequently permit the hunter to approach very close without taking the alarm. There are, however, great areas of territory where, owing to the thick and tangled character of the undergrowth, stalking is out of the question, because of the impossibility of noiseless progress through the thickets. Hounds are therefore often used to drive the deer to certain well-known runways, or into lakes, rivers, or arms of the sea, where the hunter has no difficulty in paddling or rowing up to the swimming quarry and dispatching it. Like the common deer, the black-tail is a rapid swimmer, and I have seen the strength and skill of two practiced paddlers severely taxed to bring a light canoe up to a deer swimming across a lake.

VIRGINIA DEER (*Cariacus Virginianus* (Bodd.) Gray).

The red deer is so well known that an extended description of its physical characteristics seems scarcely necessary. The summer coat is bright bay; the throat and under surface of the tail being white at all seasons. In the autumn, the coat becomes grayer and the animal is then said to be "in the blue." There is usually a reddish or brownish cast over the deer's coat, even in winter. The upper surface of the tail is dark brown. The shape of the Virginia deer is the most graceful of any of our species. The head is slim and delicate, the ears fine and pointed, and the legs long and slender. The conspicuous feature of this species, when frightened, is the tail, which is carried high and shows the white under-surface.

This has the widest distribution of any of our deer, extending from ocean to ocean, and from about the fifty-fourth parallel of north latitude south into Mexico, and, perhaps, Central America. Unlike the elk and the mule-deer, it does not retreat before the advance of civilization, but when driven from its home, disappears for a short time only, and soon returns. To-day, there are probably not more than one or two States in the Union in which wild deer do not exist, and a high authority recently wrote, "It may be found to-day in every State and Territory of the United States."

There is a very wide variation in the size of individuals of this species in different and even in the same sections of country. On these differences, as distinguishing characters, a number of supposed varieties of *C. Virginianus (leucurus, macrurus, Mexicanus,* and *Couesi)* have been based, most of which appear to be of doubtful validity. There are big deer and little deer, just as there are tall and short men; and until some characters more tangible and constant than size can be given, it is scarcely worth while to dignify small specimens of the Virginia deer with varietal names. In the year 1874, during the first expedition of the late General Custer into the Black Hills of Dakota, deer were found there in great numbers, and most of them were of this species. It was a common thing to kill, on the same day, adult bucks, which one man could without difficulty lift and put on a horse, and others, two or three times as large, which required the united strength of two men to put in the same position.

The Virginia deer seems equally at home among the mountains, in the forest, or on the prairie. It delights in dense cover in which to rest, and in a prairie country conceals itself during the greater portion of the day in the willowy thicket along the streams or among the high grass of sloughs.

From its wide distribution and the consequent variety of the locations in which it makes its home, it is hunted in a number of different ways. Still hunting is the most legitimate as it is the most difficult method. Hunting with hounds, as usually practiced in the South, has much to recommend it. The dogs are put on the track of the deer, and the hunters, armed with shot-guns, follow on horseback, keeping as near the hounds as possible, and endeavoring, by cutting across corners and riding chords of circles, to get within shot of the fleeing animal. To successfully follow the chase through forest, swamp, and canebrake, or along the rough mountain-sides, requires courage, nerve, and a firm seat in the saddle, and no better school of horsemanship could be devised than this method of deer hunting. Its excellence was well shown during the early part of the war, when the irregular Confederate cavalry, armed with double-barreled shot-guns, were very troublesome to the Union forces. Hounds are also employed to drive the deer to runways or to water. It requires no very great degree of skill to shoot a deer as he runs by within thirty or forty yards, and even less to kill one when swimming in the water but a few feet from the boat. The latter method is therefore in high favor with the average summer tourist, who cares nothing as to how his game is secured, provided only he can truthfully boast that he has killed a deer. Jacking is a very pernicious method often employed in summer or when deer are abundant. A lantern or fire of some kind is carried, which discloses the position of the deer, while the glare of the light dazzles it, and it stands gazing for a longer or shorter period, giving the hunter an opportunity to shoot. "Breasting" is employed where the deer make their home among very high grass, such as is to be found on some of the prairies of the South-west or in the great beds of the dry lakes which are to be found in northern and western Nebraska. Here the thick cane-grass stands seven or eight feet high, and the head of a mounted man is only just visible above the tops. Several horsemen, armed with shot-guns, form a line on the leeward side of the space to be hunted

over and ride through it, a little more than a gun-shot apart. The deer that lie in their course are started from the grass, and bound off ahead of the hunters, every now and then showing their backs above the tops of the grass. The horsemen have to shoot from the saddle, and very quickly, to secure their game.

Fossil deer occur in the tertiary deposits of North America. In the Miocene of the West are found remains of deer-like animals, *Leptomeryx;* and from the lower Pliocene a genus of true deer, *Cosoryx*, has been described, of which there are several species. These all have very small antlers, which are divided into two tines. In their osteological characters these deer differed from existing species in many respects. The orbit was not closed behind, and the metapodial (splint) bones were entire, though those of the second and fifth digits were very slender.

In the Post-pliocene deposits, species of deer, closely allied to our elk, moose, and caribou, have been found, the latter having been met with far south of its present range.

MOOSE-HUNTING.

By CHARLES C. WARD.

IT is much to be regretted that a mammal of so much dignity and importance as the American moose (*Cervus Alces*— Linn.; *Alce Americanus*—Jardine) is fast disappearing from our forests. Tardy legislation is doing something, it is true, for his protection, and may probably prevent a repetition of such a scene as happened on the Tobique River in the province of New Brunswick, several years ago, when several hundred of these noble animals were slaughtered for the sake of their hides, and their carcasses left to rot in the forest.

To the early settlers in the States of Maine, Vermont, and New Hampshire, and the provinces of Nova Scotia and New Brunswick, the flesh of the moose was the main-stay, and his hide furnished them with serviceable clothing. At the present time, with the exception of Maine, the moose are almost extinct in the Eastern States, and they are becoming scarce in Nova Scotia. In New Brunswick, they are seldom found on the rivers emptying into the Bay of Fundy, where in former days they existed in vast numbers. They can yet be found, however, in considerable numbers on the head-waters of the Restigouche and Miramichi rivers and their branches; in the provinces of Quebec and Ontario south of the St. Lawrence; in the central parts of the county of Rimouski, and thence southward along the borders of Maine, and all through the country south of the city of Quebec to New Hampshire. In the county of Gaspé they are extinct, having been exterminated by ruthless hunters for the sake of their hides. North of the Ottawa and St. Lawrence rivers, the moose ranges from Lake Wanapitiping nearly to the Saguenay. Their northern limit is now somewhere near the water-shed of Hudson Bay; it was formerly beyond it. The western limit is about the longitude of Lake Huron. None are now found north

of Lake Superior, although they have existed in this region as far north as the Albany River. In the North-west territories, they are found as far as the Mackenzie River. A friend gave me the measurements of a moose killed in Rupert's Land, which, if correct, would go far to verify some of the old-time stories of the wondrous size of the moose. In the United States, moose are still found in sufficient numbers to warrant the belief that, by judicious protection, the species might be perpetuated. They are quite abundant in Oregon, Washington Territory, and the whole northern border of the United States as far as the Lake of the Woods. They are still met with occasionally in the northern part of Michigan, along the shores of Lake Superior, and very rarely in northern Vermont and the Adirondack region. They also inhabit the wooded region of the great lakes and that lying thence westward to the Rocky Mountains. The southernmost point at which they have been found in the West is in Idaho, on the forks of the Snake River near the Three Tetons, where several were seen and killed by members of the United States Geological and Geographical Survey of the Territories. The present southern limits of the moose on the Atlantic coast are the provinces of New Brunswick and Nova Scotia, in the Bay of Fundy. These provinces are still his favorite haunts, and here in the present day he is most accessible to the hunter. This is perhaps owing to the infinite number of lakes and the prevalence of swampy, low-lying woods and bogs, in which he loves to dwell.*

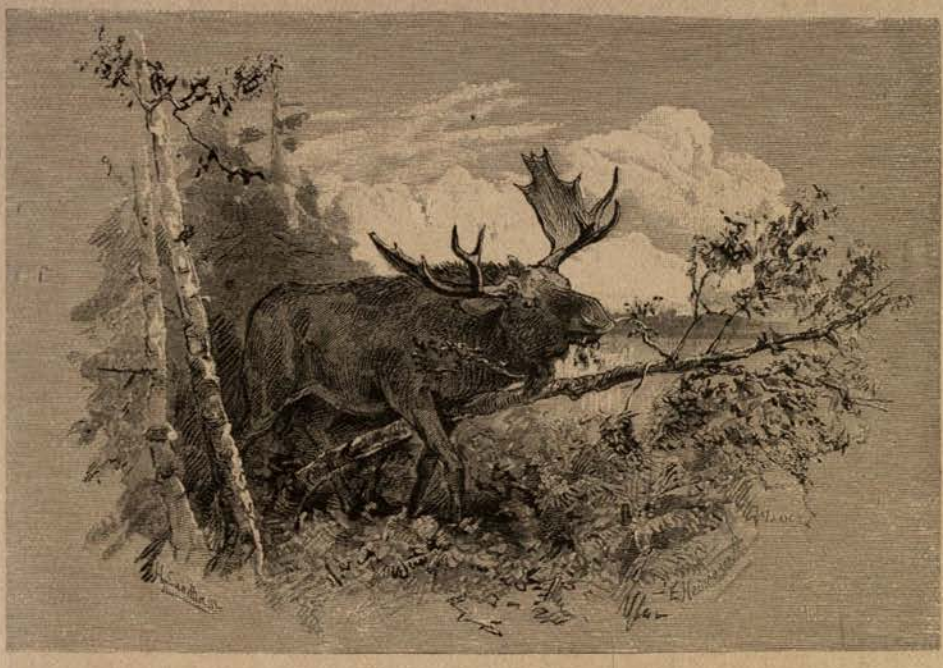
The color of the American moose when in his prime is almost jet black, becoming more or less streaked with brownish gray as the animal advances in years. The head is so large as to appear out of harmony with the other proportions of the body. The ears are upward of one foot long, yellowish brown in color, and bordered with a narrow strip of a deeper shade, the inside lined with yellow hairs. Surrounding the orbit of the eye the skin is destitute of hair, and is of a pale flesh color; the eye is a velvety brown, and soft in expression, except when the animal is wounded or brought to bay, when it assumes a lurid hue and a twinkling, savage expression. The flanks

* I beg to acknowledge the kindness of Professor Baird, of the Smithsonian Institution, Dr. Elliott Coues, U. S. A., and Professor Bell, of the Geological Survey of Canada, in furnishing me with the latest information with regard to the geographical distribution of the moose.

are a yellowish white, and the legs brown, and of extraordinary length. White, of Selborne, writing of a moose which he had seen, quaintly remarks upon "the strange length of its legs, on which it was tilted up much in the manner of the birds of the grallæ order." A curious muscular development of the upper lip, termed the moufle, is common to both sexes, and a pendulous gland hangs from the neck of the males. The neck and withers are surmounted by a voluminous mane of a light gray color. This hair is dyed various brilliant colors by the Indians, and is used to embroider designs upon birch bark, velvet, and other materials.

The largest moose that I ever saw measured six feet and nearly five inches at the withers, a trifle less at the buttock, and four feet and five inches from the withers to the buttock, and from withers to the top of the skull, twenty-seven inches. The head measured two feet and five inches from the moufle to a point between the ears, and nine inches between the eyes. The horns weighed forty-five pounds, and measured four feet and three inches from tine to tine at their widest part, and at their greatest width the palmated parts measured thirteen inches. The horn, at its junction with the skull, was eight inches in circumference. The whole carcass, before gralloching, must have weighed close upon twelve hundred pounds. I have heard of cases where the specimen exceeded these measurements, but the reports lacked confirmation. The moose is commonly represented very much higher at the withers than at the buttock, which is undoubtedly a mistake, as in no instance (and I have measured many animals) have I found any great difference in favor of height at the withers, although the *mane* gives a casual observer a contrary impression. The great length of its legs and prehensile lip are of much benefit to the moose, and wonderfully adapted to his mode of feeding, which consists in peeling the bark from, and browsing upon, the branches and tender shoots of deciduous trees. When the branches or tops of trees are beyond his reach, he resorts to the process termed by hunters "riding down the tree," by getting astride of it and bearing it down by the weight of his body until the coveted branches are within his reach.

The senses of smelling and hearing are very acute; his long ears are ever moving to and fro, intent to catch the slightest sound, and his wonderfully constructed nose carries the signal of danger to his



RIDING DOWN A TREE.

brain long before the unwary hunter has the slightest idea that his presence is suspected. When alarmed, this ponderous animal moves away with the silence of death, carefully avoiding all obstructions, and selecting the moss-carpeted bogs and swales, through which he threads his way with a persistence that often sets at defiance all the arts and endurance of even the practiced Indian hunter.

Much has been said and written of the ungainly appearance of the moose. Probably very few persons have seen the moose in his wild state,— perhaps only after he has passed through the hands of some unskilled taxidermist, whence he emerges, in most instances, an animal fearfully and wonderfully made. No person who has seen this noble animal in his native forests could fail to be impressed with the majesty and grandeur of his appearance. A few years ago, I was painting some tree studies near one of the numerous lakes in Charlotte County, New Brunswick, and for a long time I sat working in utter silence, until my attention was attracted by a movement in the branches, and presently a magnificent moose came out into the open, and walked quietly down to a pond almost directly in front of me, with his head erect and his broad antlers thrown back almost to his

withers; his jet black skin, spotted white by the checkered sunlight, shone as glossy as satin. For a moment he stood silent, as if listening, then moved away, all unconscious that he had had a spectator.

A full-grown moose sheds his horns in the month of January, and they are not again fully restored until the end of August. By this time the velvet has been worn off and the horns are a rich fawn color, shaded or marked with dark brown, and polished by having been rubbed on the stems of the poplar and larch. The animal is now in the perfection of his strength and condition, and emerging from the swamps and bogs where he has spent the summer, feeding on the yellow pond-lilies, and evading the moose-fly and similar pests by frequently standing neck deep in some forest lake, he abandons the long silence maintained while his horns were in the velvet, and enters upon the rutting season—a noisy, aggressive, and pugnacious character. The fights which now occur between the old males are terrific. Greek has met Greek, and the combat is often prolonged until their horns become inextricably interlaced, and both animals die a miserable death. I once saw, in the month of October, two pairs of horns firmly locked together, with parts of the skulls attached, sticking out of a swamp, but as we were on the trail of a moose and had no time to spare, I failed to secure them; I could never find the spot again.

Early in May, the cow-moose brings forth two, and sometimes three calves, of a dark fawn color and slightly dappled. It has been affirmed that the cow-moose retires to some sequestered spot in order to protect her young from the attacks of bears and also of the bull-moose, but I am of opinion that the latter is not at any time very distant from the cow and her calves.

On one occasion, in the early summer, I saw an old cow-moose, with two calves, come out from an island in a lake and disport in the water. Presently a very large bull-moose came out of the forest at a little distance from them, and began to eat the roots of the yellow pond-lily, which he procured by diving for them and bringing them to the surface of the water in his teeth. While he was still feeding, the cow and her calves retired.

On the approach of winter, the moose form into small herds of five or six animals, often containing a bull, a cow, and the young of two seasons, and establish themselves in what is termed a moose-yard. The yard is situated in some part of the country where there

A MOOSE FAMILY.

is an abundant growth of young deciduous trees, such as the white birch, poplar, maples, and mountain ash; these, together with a few of the coniferous trees, the balsam fir and juniper, form the staple diet of the moose. Some writers maintain that the bull-moose never yards with the females and young, but this is disproved by my own experience as a moose-hunter, extending over a period of many years, and in company with one of the most intelligent and accomplished Indian guides. I have on many occasions found and killed males occupying the same yard with old and young females. A few years ago, when out on a hunt with my friend, Colonel W——, and some Indian guides, we discovered a moose-yard, occupied by a very large bull, two cows, and younger animals. After a long and desperate hunt, we killed the bull and captured one of the young moose alive. I admit that very old bulls, grizzled with age, their horns almost bleached white, affect solitary habits, and yard alone.

The maximum age attained by the moose is difficult to determine; some hunters profess to judge by the number of tines on the horns, but that method is not to be relied upon. The Indians say that the horns do not attain their full size until the sixth year, and

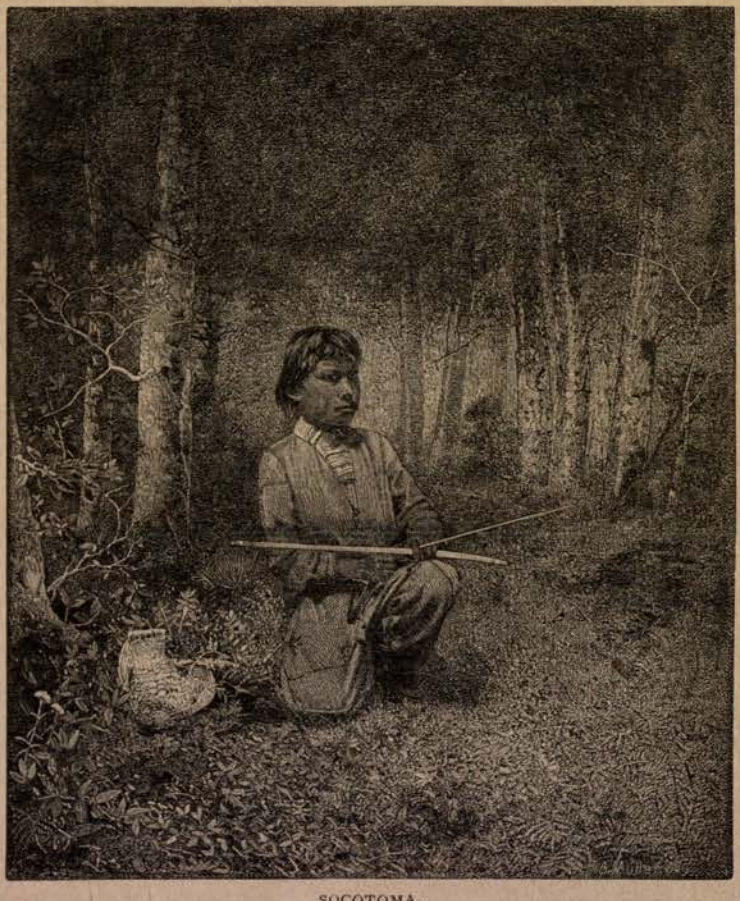
A MOOSE-YARD.

that then the tines and palmation are perfect; and further, that the duration of life is probably about twenty years.

There are three modes of hunting the moose, termed still hunting, fire hunting, and calling. There was another mode, which, I am happy to say, legislation has in a great measure suppressed. I refer to the wholesale slaughter of the unfortunate animals when the deep-lying snows of a protracted winter had imprisoned them in their yards and rendered them only a too easy prey to the unprincipled butchers who slew them for the sake of their skins.

To be successful in still hunting, or creeping upon the moose, necessitates the aid of a skillful Indian guide. Very few, if any, white men ever attain the marvelous precision with which an Indian, to whom the pathless forest is an open book which he reads as he runs, will track to its death an animal so exceedingly sensitive to the approach of man. This gift, or instinct, seems born with the Indian, and is practiced from his early childhood. It is not uncommon to

find little Indian boys in the forest, several miles from the wigwam, armed with a bow and arrows, the latter having an old knife-blade inserted in the heads. One little fellow named Socotoma was a very expert shot, and woe betide *mit-chi-ess*, the grouse, and *mat-a-guis*, the hare, if they happened in the way of little Socotoma when he



SOCOTOMA.

was on the war-path; and although he could not thus be killed, even *moo-in*, the bear, would be likely to feel the "stinging arrow."

The finely modulated voice of the Indian is especially adapted to imitate the different calls and cries of the denizens of the forest, and with a trumpet of birch bark he will imitate to the life the plaintive low of the cow-moose and the responsive bellow of the bull. Early morning, twilight, or moonlight are all favorable to this manner of hunting. The Indian, having selected a favorable position for his

THE MOOSE-CALL.

purpose, generally on the margin of a lake, heath, or bog, where he can readily conceal himself, puts his birchen trumpet to his mouth, and gives the call of the cow-moose in a manner so startling and truthful that only the educated ear of an Indian could detect the counterfeit. If the call is successful, presently the responsive bull-moose is heard crashing through the forest, uttering his blood-curdling bellow or roar, and rattling his horns against the trees in challenge to all rivals, as he comes to the death which awaits him. Should the imitation be poor, the bull will either not respond at all,

or approach in a stealthy manner and retire on discovery of the cheat. Moose-calling is seldom attempted by white men, the gift of calling with success being rare even among the Indians.

Fire hunting, or hunting by torch-light, is practiced by exhibiting a bright light, formed by burning bunches of birch bark in places known to be frequented by moose. The brilliant light seems to fascinate the animal, and he will readily approach within range of the rifle. The torch placed in the bow of a canoe is also used as a lure on a lake or river, but is attended with considerable danger, as a wounded or enraged moose will not unfrequently upset the canoe.

The mode of hunting which generally prevails is that of still hunting, or creeping upon the moose, which is undoubtedly the most sportsmanlike way, and affords the greatest pleasure. Still hunting can be practiced in September, and all through the early winter months, until the snow becomes so deep that it would be a sin to molest the poor animals. The months of September and October are charming months for camping out, and the moose are then in fine condition, and great skill and endurance are called for on the part of the hunter. The moose possesses a vast amount of pluck, and when once started on his long, swinging trot, his legs seem tireless, and he will stride over bowlders and windfalls at a pace which soon distances his pursuers, and, but for the sagacity of the Indian guide in picking out the trail, would almost always escape.

STILL HUNTING.

FIRE HUNTING.

If the sportsman combines the tastes of a naturalist with his love of out-door life, his camping-out holiday will prove all the more enjoyable. One often hears the remark, "How strange it is that animals, birds, life of any kind, is so seldom met with in an American forest!" My own experience, and I doubt not that of many other lovers of nature, has been very different, for whatever your name may be, you will seldom gain the confines of the forest without being greeted as "Sweet Willie," by *ki-ha-neas*, the smaller red-polled linnet, and you will not have traveled far before the little chickadee, hanging head down as is his wont, will welcome you to the forest. The Indian name for little black-cap, *kich-e-ge-gelas*, is surprisingly like his note of greeting. And before you fairly get your lunch out, that ubiqui-

tous rascal with the long string of jaw-breaking names, *Corvus Canadensis, Perisoreus Canadensis*, Canada jay, *ump-kanu-sis*, whisky-jack, or moose-bird, will perch on the toe of your boot, or some other point of vantage, and dispute every mouthful with you; while *me-kok*, the little red squirrel, is sure to be on hand, chattering querulously for his share of the crumbs. Presently, the tall ferns in front of you wave slightly, and *mat-a-guis*, the hare, bounds off; and if you watch quietly you will probably see *quak-sis*, the fox, follow quickly on his trail,—and all this while you are eating your lunch. That over, you start on the business of the day, fishing or shooting, and at almost every step you are surrounded by the denizens of the forest. There is that old hen-grouse again, with the broken wing, which is not broken at all; she is only fooling you while her brood of little chicks are scampering off out of your way. That bunch of tumbled brakes, not yet recovered from the pressure of some heavy body, tells you that *moo-in*, the bear, has been roused from his mid-day nap, and is beating a hasty retreat on your approach. A foot-print in the wet moss, not unlike that of a large dog, hints to you that *ma-al-sin*, the wolf, is at his old tricks again, chasing the deer. If you are bent on fishing, and are careful as you approach the stream, you may detect that industrious individual, *qua-beet*, the beaver, repairing a leak in his dam. And in particular, rest assured, if you succeed in catching some trout, that the daring thief, *che-ok-kis*, the mink, will be apt to steal them from under your very nose; and in the gloaming your ears will be charmed by a chorus of many songsters, led by that melodious vocalist the hermit thrush. And yet there are people who say there is no life in an American forest!

In moose-hunting, the services of a trustworthy Indian guide are indispensable, not only to insure success, but for the sake of comfort. These Indians are masters of wood-craft, and can start a fire in the heaviest rain or snow storm; they are also expert ax-men, and furnish an abundant supply of dry fire-wood, and keep up such a roaring fire in front of the comfortable bark-covered camp, that the cold is seldom felt, even when camping out in winter on the snow. The writer has been fortunate in having had on his hunting expeditions the services of Sebatis, a member of the tribe of Passamaquoddy Indians, who, unlike their savage brethren of the plains, are a peaceful and interesting people, and live quietly on their reservations at

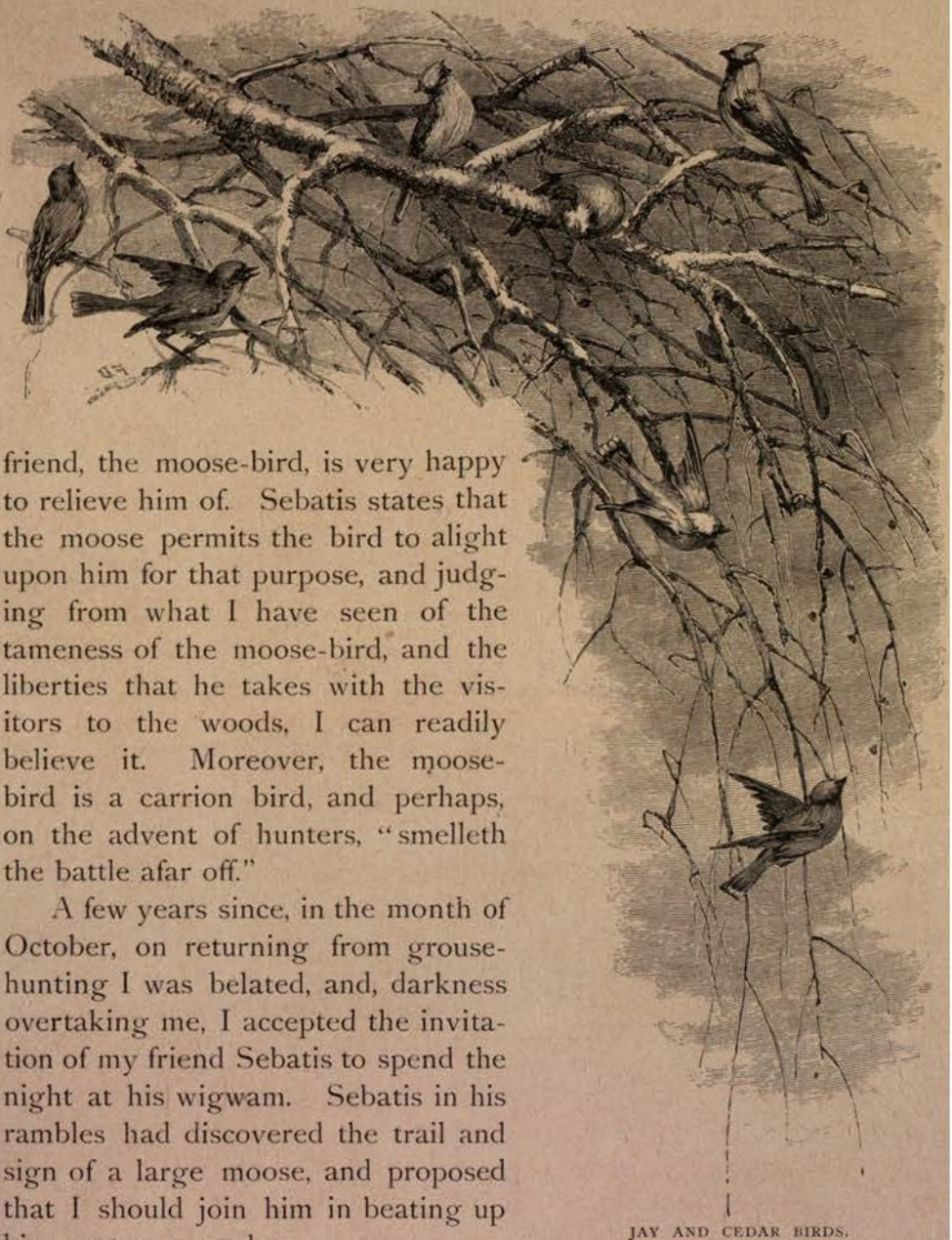
Pleasant Point, near Eastport, Maine. The Passamaquoddies receive subsidy from the United States and Canadian governments, and they and the Penobscot Indians have each a representative of their own race in the Maine legislature.

My tried friend and companion of many a hunt, Sebatis, is a thoroughbred Indian of Mohawk descent, and an accomplished hunter. His wonderful knowledge of the woods, and of the habits of animals and birds, gained in a life-long experience, is seldom

MOOSE-BIRDS.

equaled, and he delights to impart his knowledge, and can readily give the Indian names for, and relate the habits of, any animal or bird inquired about. He is also an excellent story-teller, and as he is a model of sobriety, one never apprehends that his interesting yarns and hair-breadth 'scapes are merely the voluble flow of "after dinner talk."

He has frequently drawn my attention to the curious fact that we invariably met large numbers of moose-birds when we happened to be in a moose country. The moose is infested by a tick, which his

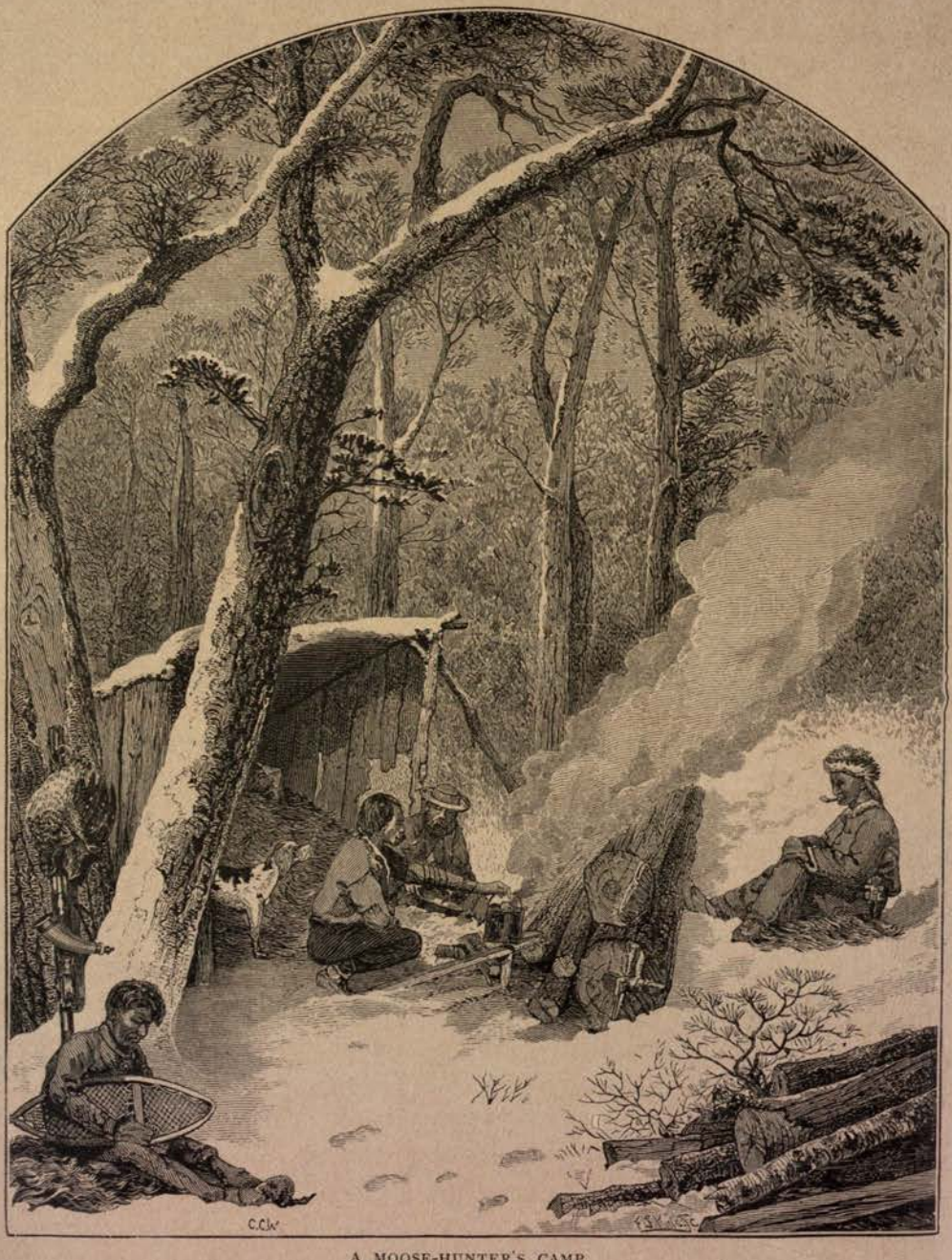


JAY AND CEDAR BIRDS.

friend, the moose-bird, is very happy to relieve him of. Sebatis states that the moose permits the bird to alight upon him for that purpose, and judging from what I have seen of the tameness of the moose-bird, and the liberties that he takes with the visitors to the woods, I can readily believe it. Moreover, the moose-bird is a carrion bird, and perhaps, on the advent of hunters, "smelleth the battle afar off."

A few years since, in the month of October, on returning from grouse-hunting I was belated, and, darkness overtaking me, I accepted the invitation of my friend Sebatis to spend the night at his wigwam. Sebatis in his rambles had discovered the trail and sign of a large moose, and proposed that I should join him in beating up his quarters next day.

In the morning, I sent into the village for my rifle and a supply of provisions, on the receipt of which we enlisted the services of Swarsin, a brother of Sebatis, and boarded the latter's canoe in the lake where he had left it the previous evening. We paddled three



A MOOSE-HUNTER'S CAMP.

miles up the western side of the lake, then portaged two miles to another lake, where we intended to establish our head-quarters. On our way, we started several coveys of ruffed grouse, and twice had a

chance to shoot deer, but Sebatis forbade molesting them, for fear we might thereby alarm the moose.

The next day we were early astir, and Sebatis started off alone to reconnoiter. In about an hour he returned and told me, in a mysterious manner, that he had found signs of two moose, one of which was a very large one,—and that he knew him very well. Upon my asking for an explanation of such a strange statement, Sebatis said:

"More'n two years ago I hunt these mount'ins with Lola—find sign very big moose. You see I can tell must be pretty big moose, 'cause he peel bark so high on trees; never all my life see moose peel 'em bark so high."

"Well, Sebatis," I said, "I suppose the sooner we get on his trail the better?"

"Sartin, start now, take two days' provisions; big moose very strong, may be travel long ways before we kill 'em."

"Not come camp again to-night?" inquired Swarsin, who looked after his comfort.

"No," replied Sebatis; "may be never see camp again. I think big moose devil."

Swarsin was lazy and very superstitious, consequently the allusion to his satanic majesty did not hasten matters in packing for the hunt, and I imagine that he did not relish the prospect of a two-days' tramp after an animal with such a questionable reputation, for he was longer than usual in getting the things together.

"Swarsin just like old woman, so slow," said Sebatis. "Best leave 'im take care camp, shoot 'em chipmunks an' rabbits."

This hastened Swarsin, and in a few moments we were off.

Sebatis led the way, which was anything but a pleasant one, for at the start we had to cross a wide bog, and great care was required in placing one's feet, as a misstep let one into the waist in the oozy mire. On the farther side of the bog a rapid brook flowed at the foot of a hard-wood ridge. By jumping from bowlder to bowlder we all, as I supposed, reached the other side in safety, but on looking back I saw Swarsin hesitating on the last jump, which was a pretty stiffish one. In such a case to hesitate is to precipitate a disaster, which proved true in poor Swarsin's case, as he jumped short of the bank, and in an instant the quick water swirled him past. In a few moments he rejoined us, much crest-fallen.

"I make mistake this mornin' when I call Swarsin ole woman; Swarsin musquash [muskrat], like'm water pretty well," said Sebatis.

Being in close proximity to the moose-sign discovered by Sebatis in the morning, we had to proceed with extreme caution so as not to make the slightest noise, and at the same time keep to the leeward of the moose. We had just gained the cover of a maple forest when Sebatis halted abruptly, and, pointing to a newly peeled maple, said:

"Fresh sign; moose peel 'em this mornin'."

And then commenced one of those wonderful exhibitions of skill on the part of the Indians, which is ever a matter of surprise and admiration to the white hunter: this sure and confident tracking of an unseen animal, through pathless forests, swamps and bogs, now stopping to examine a broken twig or a half obliterated foot-print in the yielding moss, or to note something utterly beyond the ken of a white man, such as the disturbance of the water in some blackish pool, or the displacement of objects which would escape the observation of any one but an Indian.

After tramping on in silence for nearly an hour, I ventured to ask Sebatis how much start the moose had.

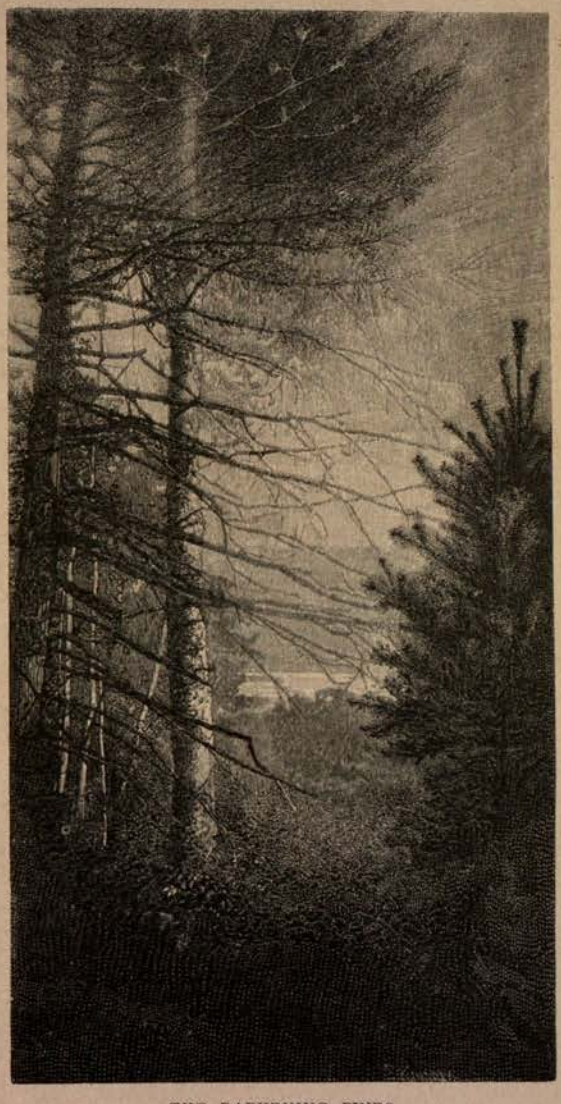
"Moose little more 'n hour ahead, walking pretty fast; may be lay down by-em-by, then we find 'im."

The country through which we were passing was covered with an unbroken forest of deciduous trees, among which the maple predominated. The brisk October air was just tempered enough to render walking enjoyable, and the hazy sun of a late Indian summer lighted up the forest with a peculiar, dreamy, golden glow.

As we penetrated deeper into the forest, the trees took on larger forms, and here and there giant pines in groups of two and three darkened our way.

"You keep 'im same course; Swarsin an' me go hunt fresh sign somewhere," said Sebatis, rousing me out of a reverie, and stalking off in ghostly silence, Swarsin following him like his shadow, and as noiseless.

As directed, I kept my course and tramped onward, the forest increasing in density and gloom as I advanced. I had probably traveled a mile or more, when I approached a dark group of pines, in the center of which rose something gray and weather-stained, having the appearance of an abandoned habitation. As I stood looking



THE DARKENING PINES.

on in surprise, I made it out to be the old and long-deserted works of some lumberers, or, mayhap, a block-house of the olden time. The walls, built of huge logs, had originally risen to a height of two stories, but the roof had been crushed in by a tree which had fallen across it, and many of the logs had dropped out of place. Out of the middle, several good-sized trees were growing, proving that it was a structure of some antiquity. All the surroundings were moss-grown, and a peculiar gray light pervaded the place,—an air of un-

substantiality which produced a curious, bewildering effect. In fact, the whole affair had such an uncanny look, that I should not have been surprised to detect the sinister face of "Le Renard Subtil" peering at me from behind a cover; and as I turned to resume my way, I had quite made up my mind to encounter the grim visage of "Le Gros Serpent," and was agreeably surprised to find my trusty Sebatis watching me intently.

THE OLD BLOCK-HOUSE.

"What you call 'im?"

"I think that it is a deserted lumberers' camp, or perhaps an old block-house."

"You watch 'im little while, then all gone, can't see not'in' 't all; plenty ghosts here; best come away."

"Did you ever see it before?"

"No, never see 'im 't all, only just now; bad luck top here; ghosts come by-em-by."

Yielding to his importunities, we walked away. Sebatis, in common with all of his race, was very superstitious, and all attempts

to convince him of the folly of entertaining such thoughts were unavailing. He still held that it had no existence in fact, and was merely a device of the evil one. It really seemed as if he wished to avoid discussion, so I let the subject drop.

We were now rejoined by Swarsin, who had followed the moose track to the edge of a swamp.

When sojourning in the woods, you have only to express a wish for a nice cool spring, and your *fidus Achates*, if he be an Indian, seldom fails to find one. In the present instance there was one at hand, as usual. We halted long enough to lunch and to smoke a pipe, and then were off again on the trail of the moose.

We now changed our tactics. Sebatis, having appointed a rendezvous at the outlet of a small lake, went off alone, while Swarsin and I tramped over to the swamp to try our luck there. Deftly picking up the sign, Swarsin led me through the treacherous bog, where I sometimes broke in to my knees, and considered myself lucky even in getting off so fortunately as that. After half an hour of this, I was overjoyed to find that the moose had taken to the forest again. However, my joy was short-lived, for soon we were again on descending ground interspersed with swamps and bogs,—a most detestable country to travel in, but fortunately, at this time of year, clear of those torments, black-flies and mosquitoes.

"Two moose track here," said Swarsin. "What best do now?"

"Keep on till we meet Sebatis."

"I see 'im Sebatis track little ways back. One moose turn back; Sebatis follow that one."

"Well, I suppose we had better keep on after the other moose."

"No; Sebatis break branches he want us follow same way."

"How do you know he broke the branches? Perhaps the moose was browsing on them."

"I can tell pretty quick. Sebatis break 'im; always moose bite 'im."

Submitting to his superior wood-craft, I told him to lead the way.

This time the moose led us over bowlder-strewn hills, with here and there a windfall thrown in. Now, in a country like this, the moose has much the advantage of the hunter, his long legs enabling him to clear obstacles which cause the hunters to pause now and then to regain their wind.

We were just clambering over a ledge of rocks on the hill-side when Swarsin said:

"Best get gun ready; moose only little ways 'head now!"

The words were hardly spoken, when the booming report of Sebatis's smooth-bore echoed through the woods, and the blue smoke from the discharge, floating up through the trees, pointed our way.

Sebatis did not seem elated with his success, though the animal he had killed was a full-grown cow-moose.

"Lost big moose again," he said. "I follow this one, think big moose all time."

"How did you get mistaken?"

"I don't get 'staken 't all,—find plenty sign two moose,—follow track bigges' one,—by-em-by lost track—don't see not'in'."

"Where did you lose the track?"

"Jus' little ways this side big barren, small lake handy, I think go on water—hide somewhere. You see, always moose like water pretty well; in summer time, when flies bad, moose get right under water jus' like porp'us, jus' leave nose out, then nobody can't see 'im 't all."

"How did you happen on the track of the cow-moose?"

"Well, you see, when I los' sign bull-moose, I go hunt 'im somewhere, then I find sign cow-moose."

"Do you think the big bull was in company with the cow-moose? Isn't the season almost too late?"

"No, not too late yet. I think jus' what you think,—may be bull come again by-em-by, then good chance call 'im to-night."

"What goin' to do with moose, Sebatis?" said Swarsin.

"Butcher 'im, then put 'im in camp,—camp handy, 'bout half mile."

The Indians, with a dexterity acquired by long practice, skinned the moose, cut up the carcass, and packed it into camp.

"Now," said Sebatis, "I go hunt chance call bull-moose to-night; Swarsin, he stay camp an' get wood an' make fire, by-em-by we have pretty good supper."

Sebatis was not long absent; on his return, he sat down in a taciturn mood to the supper which Swarsin had cooked.

Much as I have been in the society of Indians, I have never got

accustomed to their abrupt way of speaking; the tone is neither harsh nor loud, but the utterance is so curt and sententious, that one is always startled and taken unawares, and this is more especially the case when on the trail. Around the camp-fire, their finely modulated voices are very musical and capable of wonderful expression. As we lay off, enjoying our pipes after supper, I asked Sebatis to tell me what he knew of the bull-moose.

"Well," he said, "I tell you all 'bout it. You see, more 'n two years ago, me an' Lola hunt moose these mount'ins. One day we find sign very large moose; hunt 'im all day, moose travel so fast we can't come up with him 't all; by-em-by night come, then camp somewhere; nex' day we follow track till 'bout sundown, then I find sign close on brook, then sign lost, can't find 'im anywhere, just same I lost 'im to-day. Then Lola an' me walk in brook, try find where moose take land again. Well, Lola, he follow brook up-stream. I go down, don't find sign anywhere; by-em-by come on lake, then I see moose swimmin' 'most cross lake, only see little piece horn stickin' up, swim so deep, you see, try hide; then I go 'round lake, creep jus' like wildcat, don't make no noise 't all, try cut 'im off, you see. Well, by-em-by get pretty tired creepin', then lift up my head look somewhere, an' by tunders! I see moose layin' down handy; then I say I got old bull-moose this time. Jus' when I put on cap my gun I hear moose jump, then I fire; well, s'pose you don't 'lieve me, when I come on place, no moose there, then scared pretty bad; sartin I think mus' be devil. Well, you see, I don't like give 'im up that way, so I load gun an' go hunt 'im sign again somewhere. By-em-by I find sign again jus' on other side big windfall; well, I stan' there lookin' roun', an' by tunders! I hear a gun fire, an' then I see Lola stan' there 'longside young t'ree-year-old bull-moose. I ask Lola where he start that moose. Well, you see, when I leave Lola on brook he go up-stream, then by-em-by see moose sign, then he go hunt 'im, you see, an' kill 'im jus' when I meet 'im. By tunder! that's very crur'us; I can't 'stand it 't all. Then Lola an' me look everywhere, don't find no sign that big bull-moose; so we have give 'im up an' go home. By tunders! I never know anythin' so crur'us all my life."

"Don't you suppose that you got confused in some way, and that the bull-moose you saw in the lake did not take ground again, and

fooled you, and that the young bull shot by Lola was the one that you saw and fired at?"

"Sartin I don't get 'fused 't all, that not same one. I tell you why; you see, I don't make no 'stake, 'cause I see that big moose layin' down jus' plain I see you now; 'sides I see horns, bigges' horns I ever see all my life."

"I guess Sebatis pretty tired that time, fall 'sleep, then dreamin', you see, don't see no moose 't all," said Swarsin.

"Don't mind what that Swarsin say, he don't know nothin', no more 'n woodchuck; what I tell you all true, every word."

"Well," said I, "Sebatis, if the big moose we hunted to-day is, as you suppose, the same one that you have just been telling about, and we are lucky in calling to-night, and manage to bag him, I suppose your mind will be at rest?"

"Sartin, you can't put 'im that moose in bag, too big; but 'spose we kill 'im, then I know 'taint devil 't all, only mighty cunnin' ole bull-moose, that's all."

"Sebatis pretty good hand tell story," said Swarsin. "S'pose he tell all 'bout bear-hunt, when he get his arm 'most tore off."

"Sartin that's true, get my arm 'most tore off sure enough," said Sebatis, as he rolled up his coat-sleeve, and exhibited several frightful scars on his left arm.

"How did that happen, Sebatis?" I inquired.

"Well, you see, happen good many years ago, used to be old times, Injins campin' out all winter, hunt, trap, everythin'. One winter two or three camps on McDougal Lake, so you see I start one mornin' look at my traps. Well, I jus' walkin' 'long, don't have no gun, no knife, not'in' but small little kind of hatchet, that's all; by-em-by I see pretty big old she-bear walkin' on snow, comin' right up to me; I little scared first, you see don' have no gun, no knife, not'in' but that small little kind of hatchet, so I think pretty poor chance kill bear. Well, not much time thinkin', for old bear come walkin' 'long pretty quick, when he got 'most up where I stan'in' then get right up on his hin' legs jus' like man an' look at me, then I don't move 't all, jus' look at bear, that's all; by-em-by that bear get down again an' go 'way walkin' very slow, then you see, I think best try kill 'im, so I chase 'm; then you see that bear stop again an' jus' gettin' up on his hin' legs, when I strike 'm all my might right on his

RETURNING FROM THE HUNT.

head with that small little kind of hatchet, s'pose hit 'im fair, sartin kill 'im; but, you see, bear very quick. When he see me try strike 'im, he jus' dodge little bit, an' on'y handle strike 'im an' broke short off, and that small little kind of hatchet fall off on snow somewhere. Then I feel pretty bad, you see, bear gettin' cross an' take right hold my arm an' bite savage; then, you see, I get pretty cross, too, so I take bear right on his t'roat both my han's an' choke 'im bad; then, you see, he don't like it 't all, begin to cry, an' I see tears come on his face, then I choke 'im all my might, you see; then he bite so savage I 'most drop. Well, I don't know what goin' happen next; when he stop bitin' so hard, then I stop choke 'im jus' a little, you see; then by-em-by he let go my arm altoget'er, then I let go his t'roat, an' he drop right on snow again an' walk off slow, then I walk off slow 'nother way, you see. Well, by tunders! my arm pain pretty bad, blood soaked all on my coat everywhere; then I go on camp pretty quick. Well, you see, nobody on that camp on'y myself, all 'lone, so I fix my arm best way I can, an' put on balsam. Nex' mornin', I take my gun an' knife, an start get that bear. By-em-by, I strike sign an' follow 'bout mile, then I fin' den. When I look in I can't see not'in' 't all, then light match an' see two little cubs, very small, jus' like small little dog; then I think best go hunt old bear, an' come back an' get cubs. Well, little

ways off I fin' sign old bear gone off somewhere's again, so I follow pretty quick, an' by-em-by see old bear walkin' on snow, an' I go up pretty close, an' jus' when he rise up again on hind legs I fire, kill 'im dead first shot, then my arm feel 'most well again, then I go get cubs; well, you see, when I fin' den again cubs all gone, on'y some little bits fur an' blood, that's all."

"What killed the cubs?" I inquired.

"Well, you see, nobody don't kill 'em 't all, *po-kumpk* been there eat 'em all up."

"Who on earth is *po-kumpk?*"

"*Po-kumpk?* that's black cat, you know; some people call 'em fishers."

"That's a very good story, Sebatis," I remarked, by way of compliment.

"No, that's not good story 't all, that's true. My arm don't get well again most six months."

The moon was now visible, and I asked Sebatis when he would try to call the moose.

"Pretty soon," he replied. "I go somewhere now try find birch bark make moose-call; you an' Swarsin take guns, an' go down on barren handy on lake, by-em-by I come."

Obeying the directions of Sebatis, Swarsin and I tramped down to the edge of the barren and took up a position in the dense shadow of some tall ferns. There was not a breath of air stirring, and the moon was partially obscured by watery-looking clouds that threatened ere long to treat us to a wetting. As we sat waiting for Sebatis, the silence was oppressive; presently, the monotony was relieved by the occasional hooting of an owl, that after a time became almost continuous.

"That owl keeps up an awful row," I said to Swarsin.

"That aint owl 't all, that Sebatis; may be he wants us come somewhere."

"Wont we make too much noise, groping our way in the dark?"

"Hist! that's cow-moose," he said, as a wailing cry floated through the air.

I shrewdly suspected the cow-moose to be none other than our friend Sebatis, with his trumpet of birch bark, and in a few moments was convinced of the fact, for from far away in the distance came the answering call of a bull-moose.

"Now, then," said Swarsin, "we try find Sebatis; you follow me creepin', then we don't make no noise 't all."

Just then the hoot of the owl was repeated, and Swarsin crept on with hastened speed. I followed as best I could, and was getting pretty tired of my bargain, when the call of a bull-moose—this time much nearer—echoed through the woods.

"Bull-moose come by-em-by," said Swarsin; "we best keep still now."

"How about Sebatis? Isn't he waiting for us?"

"Sebatis here," replied that worthy, who had joined us so silently as to escape my notice.

"What is the matter with the moose?" I whispered to Sebatis. "Isn't he coming very slowly?"

"Well, I tell you," said Sebatis; "you see, that moose either devil, else he know so much we can't cheat 'im easy. When I first try 'im he answer kind of frightened, don't smash 'round 't all an' make big noise. Mos' bull-moose, when he hear cow, get kind of jealous, you see, an' begin roar an' smash 'roun', an' knock his horns on trees, try make big noise, you see, an' scare off some other bull may be. Now I try 'im again."

And once more the marvelous imitation of the cry of the cow-moose, in plaintive and gentle cadence, floated through the air.

I should have been extremely disappointed if this last masterly performance of Sebatis's had failed to elicit a response. For a time, I thought that it had failed, when I was startled by hearing the angry challenge of a bull, close at hand.

"Sartin I cheat bull-moose that time," chuckled Sebatis! "He's comin' now, best have gun ready."

For a few moments we listened intently, with our ears on the alert for the slightest sound.

"Sebatis," I whispered, "I'm afraid he wont come."

"You jus' keep quiet little while, you see I know all 'bout it; that very wise ole bull, he been fooled good many times, you see; that make 'im pretty scarey—by-em-by—s'pose all quiet, I try 'im 'gain."

"Has he gone back from us since you called the last time?"

"No, he's comin' all time; but, you see, he try 'roun' every way first, try an' get our wind; s'pose he don't get on lee side, we have 'im sure."

"How is it we don't hear him?"

"Always moose when scared come slow; very careful, you see, don't step on branches, not'in', make no noise 't all, and keep listenin' all time, you see; that take 'im long time gettin' here."

Again the counterfeit presentment, this time louder than before, echoed through the forest. As it died away, our ears detected a slight crash in the woods, instantly followed by a soft note from a bull-moose, to which Sebatis replied, then all was silent.

"Look," said Sebatis in a low tone, "bull-moose comin', you see big black somethin' on barren this side lake, that's him. Now, when you see 'im clear, make good shot."

Although I strained my eyes in trying to discern the moose, it was some time before I could make him out, and then not in a way to insure a satisfactory shot. Reaching out my hand, I touched Sebatis, who took the hint, and in a low, modulated tone again gave the call.

This time, without replying, the bull-moose moved cautiously forward, evidently very uneasy and anxious. His great body was now plainly visible in full relief against the shimmering lake, and as it was not likely that I would get a better chance I fired. There was a crash, and as the smoke cleared away I saw the moose struggling to his feet again, when Sebatis put in a well-directed shot and ended the scene.

"By tunders!" exclaimed Sebatis, as he gazed on the huge proportions of the fallen moose, "that bigges' moose I ever see all my life; no wonder I t'ink devil, so cunnin', you see. One time to-night I t'ink not much chance kill that moose."

"You still think that it is the moose that fooled you so often?"

"Sartin, that same moose; I know 'im, you see, 'cause horns so broad, 'most five feet 'cross on top."

The measurements and weight of this noble specimen have been stated in another part of this paper, and the magnificent antlers are now in the possession of the writer.

Charlotte County, New Brunswick, the scene of our hunt, was at one time a place much frequented by Indians, and various interesting relics of their former occupation of the country have been from time to time discovered. On the portage road at St. George, stone pipes, chisels, tomahawks, etc., etc., have frequently been turned up, and a

few years since an object of much ethnological interest was found, in the shape of a stone medallion having the full-sized head of an Indian sculptured upon it. This stone is now in the collection of the Natural History Society at St. John, New Brunswick. On one of the mountains on Lake Utopia there was at one time a curious structure resembling an altar, and built with large slabs of granite. Recently some vandals, in order to gratify an idiotic whim, tumbled the largest block down the hill-side and into the lake.

The glory of the noble forest where we hunted the devil-moose has departed, and all is now blackened stumps and ashes where once the green canopy seemed boundless. Sometimes a heavy gale, such as the Saxby in 1869, prostrates the trees, or the insatiable lumbermen cut them down, and then in summer-time, when everything is as dry as tinder, a party of hunters or anglers are careless of their fire, and soon the country is in a blaze for miles. This drives the moose and caribou away from their ancient haunts, and they seldom return. With a little precaution, all of this might be prevented, and the trouble of restocking our rivers with salmon, trying to re-introduce the game, and all the rest of it, might be avoided.

Nowadays, when I take a holiday with Sebatis, we occasionally make a long hunt in search of moose or caribou, but in general have to content ourselves with a deer, the ruffed grouse, ducks, and hares of the country, and the glorious brook-trout which fill the innumerable lakes in Charlotte County,—single specimens often reaching the weight of seven pounds.

MOOSE-HUNTING IN CANADA.*

By THE EARL OF DUNRAVEN.

MOOSE-HUNTING, if it has no other advantages, at least leads a man to solitude and the woods, and life in the woods tends to develop many excellent qualities which are not invariably produced by what we are pleased to call our civilization. It makes a man patient and able to bear constant disappointments; it enables him to endure hardships with indifference, and it produces a feeling of self-reliance which is both pleasant and serviceable. True luxury, to my mind, is only to be found in such a life. No man who has not experienced it knows what an exhilarating feeling it is to be entirely independent of weather, comparatively indifferent to hunger, thirst, cold, and heat, and to feel himself capable, not only of supporting, but of enjoying life thoroughly, and that by the mere exercise of his own faculties. Happiness consists in having few wants and being able to satisfy them, and there is more real comfort to be found in a birch-bark camp than in the most luxuriously furnished and carefully appointed dwelling.

Such a home I have often helped to make. It does not belong to any recognized order of architecture, although it may fairly claim an ancient origin. To erect it requires no great exercise of skill, and calls for no training in art schools. I will briefly describe it.

A birch-bark camp is made in many ways. The best plan is to build it in the form of a square, varying in size according to the number of inhabitants that you propose to accommodate. Having selected a suitable level spot and cleared away the shrubs and rub-

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bish, you proceed to make four low walls composed of two or three small suitable-sized pine logs laid one on the other, and on these little low walls so constructed you raise the frame-work of the camp. This consists of light thin poles, the lower ends being stuck into the upper surface of the pine trees which form the walls, and the upper ends leaning against and supporting each other. The next operation is to strip large sheets of bark off the birch trees, and thatch these poles with them to within a foot or two of the top, leaving a sufficient aperture for the smoke to escape. Other poles are then laid upon the sheets of birch-bark to keep them in their places. A small door-way is left in one side, and a door is constructed out of slabs of wood, or out of the skin of some animal. The uppermost log is hewn through with an ax, so that the wall shall not be inconveniently high to step over, and the hut is finished. Such a camp is perfectly impervious to wind or weather, or, rather, can be made so by filling up the joints and cracks between the sheets of birch-bark and the interstices between the pine logs with moss and dry leaves. You next level off the ground inside, and on three sides of the square strew it thickly with the small tops of the *sapin*, or Canada balsam fir, for a breadth of about four feet; then take some long pliant ash saplings or withy rods, and peg them down along the edge of the pine tops to keep your bed or carpet in its place, leaving a bare space in the center of the hut, where you make your fire. Two or three rough slabs of pine, to act as shelves, must then be fixed into the wall, a couple of portage-straps, or tump-lines stretched across, on which to hang your clothes, and the habitation is complete.

I ought, perhaps, to explain what a "portage-strap" and a "portage" are. Many French and Spanish words have become incorporated with the English language in America. The Western cattle-man, or farmer, speaks of his farm or house as his "ranche," calls the inclosure into which he drives his stock a "corral," fastens his horse with a "lariat," digs an "acequia" to irrigate his land, gets lost in the "chapparal," instead of the bush, and uses commonly many other Spanish words and expressions. No hunter or trapper talks of hiding anything; he "caches" it, and he calls the place where he has stowed away a little store of powder, flour, or some of the other necessaries of life, a "cache." The French word "prairie," as everybody knows, has become part and parcel of the English lan-

guage. Indians and half-breeds, who never heard French spoken in their lives, greet each other at meeting and parting with the salutation "bo jour" and "adieu." And so the word "portage" has come to be generally used to denote the piece of dry land separating two rivers or lakes over which it is necessary to carry canoes and baggage when traveling through the country in summer. Sometimes it is literally translated and called a "carry." Another French word, "traverse," is frequently used in canoeing, to signify a large unsheltered piece of water which it is necessary to cross. A deeply laden birch-bark canoe will not stand a great deal of sea, and quite a heavy sea gets up very rapidly on large fresh-water lakes, so that a long "traverse" is a somewhat formidable matter. You may want to cross a lake, say five or six miles in width, but of such a size that it would take you a couple of days to coast all round. That open stretch of five or six miles would be called a "traverse."

The number and length of the portages on any canoe route, and the kind of trail that leads over them, are important matters to consider in canoe traveling. A man, in giving information about any journey, will enter into most minute particulars about them. He will say, "You go up such-and-such a river," and he will tell you all about it—where there are strong rapids, where it is very shallow, where there are deep still reaches in which the paddle can be used, and where you must pole, and so forth. Then he will tell you how you come to some violent rapid or fall that necessitates a "portage," and explain exactly how to strike into the eddy, and shove your canoe into the bank at a certain place, and take her out there, and how long the "portage" is; whether there is a good trail, or a bad trail, or no trail at all; and so on with every "portage" on the route. Carrying canoes and baggage across the "portage" is arduous work. A birch-bark canoe must be treated delicately, for it is a very fragile creature. You allow it to ground very carefully, step out into the water, take out all the bales, boxes, pots, pans, bedding, rifles, etc., lift up the canoe bodily, and turn her upside down for a few minutes to drain the water out. The Indian then turns her over, grasps the middle thwart with both hands, and with a sudden twist of the wrists heaves her up in the air, and deposits her upside down on his shoulders, and walks off with his burden. An ordinary-sized Mic-Mac or Melicite canoe, such as one man can easily carry, weighs

about seventy or eighty pounds, and will take two men and about six hundred or seven hundred pounds.

The *impedimenta* are carried in this manner: A blanket, doubled to a suitable size, is laid upon the ground; you take your portage-strap, or tump-line, as it is sometimes called, which is composed of strips of webbing or some such material, and is about twelve feet long, a length of about two feet in the center being made of a piece of broad, soft leather; you lay your line on the blanket so that the leather part projects, and fold the edges of the blanket over either portion of the strap. You then pile up the articles to be carried in the center, double the blanket over them, and by hauling upon the two parts of the strap bring the blanket together at either side, so that nothing can fall out. You then cut a skewer of wood, stick it through the blanket in the center, securely knot the strap at either end, and your pack is made. You have a compact bundle, with the leather portion of the portage-strap projecting like a loop, which is passed over the head and shoulders, and the pack is carried on the back by means of the loop which passes across the chest. If the pack is very heavy, and the distance long, it is usual to make an additional band out of a handkerchief or something of that kind, to attach it to the bundle, and pass it across the forehead, so as to take some of the pressure off the chest. The regular weight of a Hudson's Bay Company's package is eighty pounds; but any Indian or half-breed will carry double this weight for a considerable distance without distress. A tump-line, therefore, forms an essential part of the *voyageur's* outfit when traveling, and it comes in handy, also, in camp as a clothes-line on which to hang one's socks and moccasins to dry.

A camp such as that I have attempted to describe is the best that can be built. An ordinary camp is constructed in the same way, but with this difference, that instead of being in the form of a square, it is in the shape of a circle, and the poles on which the bark is laid are stuck into the ground instead of into low walls. There is not half so much room in such a camp as in the former, although the amount of material employed is in both cases the same. It may be objected that the sleeping arrangements cannot be very luxurious in camp. A good bed is certainly an excellent thing, but it is very hard to find a better bed than Nature has provided in the wilderness. It would

appear as if Providence had specially designed the Canada balsam fir for the purpose of making a soft couch for tired hunters. It is the only one, so far as I am aware, of the coniferous trees of North America in which the leaves or spiculæ lie perfectly flat. The consequence of that excellent arrangement is, that a bed made of the short, tender tips of the Canada balsam, spread evenly to the depth of about a foot, is one of the softest, most elastic, and most pleasant couches that can be imagined; and as the scent of the sap of the Canada balsam is absolutely delicious, it is always sweet and refreshing — which is more than can be said for many beds of civilization.

Hunger is a good sauce. A man coming in tired and hungry will find more enjoyment in a piece of moose meat and a cup of tea than in the most luxurious of banquets. Moreover, it must be remembered that some of the wild meats of North America cannot be excelled in flavor and delicacy; nothing, for instance, can be better than moose or caribou, mountain sheep or antelope. The "moufle," or nose of the moose, and his marrow-bones are dainties which would be highly appreciated by accomplished epicures. The meat is good, and no better method of cooking it has yet been discovered than the simple one of roasting it before a wood fire on a pointed stick. Simplicity is a great source of comfort, and makes up for many luxuries; and nothing can be more simple, and at the same time more comfortable, than life in such a birch-bark camp as I have attempted to describe. In summer-time, and in the fall, until the weather begins to get a little cold, a tent affords all the shelter that the sportsman or the tourist can require. But when the leaves are all fallen, when the lakes begin to freeze up, and snow covers the earth, or may be looked for at any moment, the nights become too cold to render dwelling in tents any longer desirable. A tent can be used in winter, and I have dwelt in one in extreme cold, when the thermometer went down as low as 32° below zero. It was rendered habitable by a little stove, which made it at the same time exceedingly disagreeable. A stove sufficiently small to be portable only contained wood enough to burn for an hour and a half or so; consequently, some one had to sit up all night to replenish it. Now, nobody could keep awake, and the result was that we had to pass through the unpleasant ordeal of alternately freezing and roasting during the whole night. The stove was of necessity composed of very thin sheet-iron, as light-

ness was an important object, and consequently when it was filled with good birch-wood and well under way, it became red-hot, and rendered the atmosphere in the tent insupportable. In about half an hour or so it would cool down a little, and one would drop off to sleep, only to wake in about an hour's time shivering, to find everything frozen solid in the tent, and the fire nearly out. Such a method of passing the night is little calculated to insure sound sleep. In the depth of winter it is quite impossible to warm a tent from the outside, however large the fire may be. It must be built at such a distance that the canvas cannot possibly catch fire, and hence all heat is dispersed long before it can reach and warm the interior of the tent. It is far better to make a "lean-to" of the canvas, build a large fire, and sleep out in the open. A "lean-to" is easily made and scarcely needs description. The name explains itself. You strike two poles, having a fork at the upper end, into the ground, slanting back slightly; lay another fir pole horizontally between the two, and resting in the crutch; then place numerous poles and branches leaning against the horizontal pole, and thus form a frame-work which you cover in as well as you can with birch-bark, pine boughs, pieces of canvas, skins, or whatever material is most handy. You build an enormous fire in the front, and the camp is complete. A "lean-to" must always be constructed with reference to the direction of the wind; it serves to keep off the wind and a certain amount of snow and rain. In other respects it is, as the Irishman said of the sedan-chair with the bottom out, more for the honor and glory of the thing than anything else. For all practical purposes, you are decidedly out of doors.

Although the scenery of the greater part of Canada cannot justly be described as grand or magnificent, yet there is a weird, melancholy, desolate beauty about her barrens, a soft loveliness in her lakes and forest glades in summer, a gorgeousness of color in her autumn woods, and a stern, sad stateliness when winter has draped them all with snow, that cannot be surpassed in any land. I remember, as distinctly as if I had left it but yesterday, the beauty of the camp from which I made my first successful expedition after moose last calling season. I had been out several times unsuccessfully, sometimes getting no answer at all; at others, calling a bull close up, but failing to induce him to show himself; sometimes failing on account

of a breeze springing up, or of the night becoming too much overcast and cloudy to enable me to see him. My companions had been equally unfortunate. We had spent the best fortnight of the season in this way, and had shifted our ground and tried everything in vain. At last, we decided on one more attempt, broke camp, loaded our canoes, and started. We made a journey of two days, traversing many lovely lakes, carrying over several portages, and arrived at our destination about three o'clock in the afternoon. We drew up our canoes at one of the prettiest spots for a camp I have ever seen. It lay beside a little sheltered, secluded bay at the head of a lovely lake, some three or four miles in length. The shores near us were covered with "hard-wood" trees—birch, maple, and beech, in their glorious autumn colors; while the more distant coasts were clothed with a somber, dark mass of firs and spruce. Above the ordinary level of the forest rose at intervals the ragged, gaunt form of some ancient and gigantic pine that had escaped the notice of the lumberman or had proved unworthy of his ax. In front of us, and to the right, acting as a breakwater to our harbor, lay a small island covered with hemlock and tamarack trees, the latter leaning over in various and most graceful angles, overhanging the water to such an extent as sometimes to be almost horizontal with it. Slightly to the left was a shallow spot in the lake marked by a growth of rushes, vividly green at the top, while the lower halves were of a most brilliant scarlet, affording the precise amount of warmth and bright coloring that the picture required. It is extraordinary how everything seems to turn to brilliant colors in the autumn in these northern latitudes. The evening was perfectly still; the surface of the lake, unbroken by the smallest ripple, shone like a mirror and reflected the coast-line and trees so accurately, that it was impossible to tell where water ended and land began.

The love of money and the love of sport are the passions that lead men into such scenes as these. The lumberman, the salmon-fisher, and the hunter in pursuit of large game, monopolize the beauties of nature in these Canadian wilds. The moose (*Cervus Alces*) and caribou (*Cervus rangifer*) are the principal large game to be found in Canada. The moose is by far the biggest of all existing deer. He attains to a height of quite eighteen hands, and weighs about twelve hundred pounds or more. The moose of

America is almost, if not quite, identical with the elk of Europe, but it attains a greater size. The horns especially are much finer than those to be found on the elk in Russia, Prussia, or the Scandinavian countries.

The moose has many advantages over other deer, but it suffers also from some terrible disadvantages, which make it an easy prey to its great and principal destroyer, man. Whereas among most, if not all, the members of the deer tribe, the female has but one fawn at a birth, the cow-moose generally drops two calves—which is much in favor of the race. The moose is blessed with an intensely acute sense of smell, with an almost equally acute sense of hearing, and it is exceedingly wary and difficult of approach. On the other hand, it is but little fitted to move in deep snow, owing to its great weight. Unlike the caribou, which has hoofs specially adapted for deep snow, the moose's feet are small, compared with the great bulk of the animal. If, therefore, it is once found and started when the snow lies deep upon the ground, its destruction is a matter of certainty; it breaks through the snow to solid earth at every step, becomes speedily exhausted, and falls an easy prey to men and dogs. Again, a large tract of land is necessary to supply food for even one moose. In summer, it feeds a good deal upon the stems and roots of water-lilies, but its staple food consists of the tender shoots of the moose-wood, ground-maple, alder, birch, poplar, and other deciduous trees. It is fond of ground-hemlock, and will also occasionally browse upon the *sapin*, or Canada balsam fir, and even upon spruce, though that is very rare, and I have known them when hard pressed to gnaw bark off the trees. Nova Scotia and New Brunswick are nearly "settled up." More and more land is cleared and brought under cultivation every day; more and more forest cut down year by year; and the moose-supporting portion of the country is becoming very limited in extent. On the other hand, the moose is an animal which could easily be preserved if only reasonable laws could be enforced. It adapts itself wonderfully to civilization. A young moose will become as tame as a domestic cow in a short time. Moose become accustomed to the ordinary noises of a settled country with such facility, that they may sometimes be found feeding within a few hundred yards of a road. A railway does not appear to disturb them at all. I have shot moose within sound of the barking of dogs and the cack-

ling of geese of a farm-house, in places where the animals must have been constantly hearing men shouting, dogs barking, and all the noises of a settlement. Their sense of hearing is developed in a wonderful degree, and they appear to be possessed of some marvelous power of discriminating between innocent sounds and noises which indicate danger. On a windy day, when the forest is full of noises,—trees cracking, branches snapping, and twigs breaking,—the moose will take no notice of all these natural sounds; but if a man breaks a twig, or, treading on a dry stick, snaps it on the ground, the moose will distinguish that sound from the hundred voices of the storm, and be off in a second.

Why it is that the moose has developed no peculiarity with regard to his feet, adapting him especially to the country in which he dwells, while the caribou that shares the woods and barrens with him has done so in a remarkable degree, I will leave philosophers to decide. In the caribou, the hoofs are very broad and round, and split up very high, so that, when the animal treads upon the soft surface of the snow, the hoofs spreading out form a natural kind of snow-shoe and prevent its sinking deep. The frog becomes absorbed toward winter, so that the whole weight of the animal rests upon the hoof, the edges of which are as sharp as a knife, and give the animals so secure a foothold that they can run without fear or danger on the slippery surface of smooth glare ice. Now the moose, on the contrary, is about as awkward on the ice as a shod horse, and will not venture out on the frozen surface of a lake if he can help it. His feet are rather small and pointed, and allow him to sink and flounder helplessly in the deep snows of midwinter and early spring.

There are several ways in which the moose is hunted; some legitimate and some decidedly illegitimate. First of all there is moose-calling, which to my mind is the most interesting of all woodland sports. It commences about the beginning of September, and lasts for about six weeks, and consists in imitating the cry of the female moose, and thereby calling up the male. This may sound easy enough to do, especially as the bull at this season of the year loses all his caution, or the greater part of it. But the pastime is surrounded by so many difficulties, that it is really the most precarious of all the methods of pursuing or endeavoring to outwit the moose; and it is at the same time the most exciting. I will endeavor

to describe the method by giving a slight sketch of the death of a moose in New Brunswick woods last year.

It was early in October. We had pitched our tents—for at that season of the year the hunter dwells in tents—upon a beautiful hard-wood ridge, bright with the painted foliage of birch and maple. The weather had been bad for calling, and no one had gone out, though we knew there were moose in the neighborhood. We had cut a great store of firewood, gathered bushels of cranberries, dug a well in the swamp close by, and attended to the thousand and one little comforts that experience teaches one to provide in the woods, and had absolutely nothing to do. The day was intensely hot and sultry, and if any one had approached the camp about noon he would have deemed it deserted. All hands had hung their blankets over the tents, by way of protection from the sun, and had gone to sleep. About one o'clock I awoke, and sauntered out of the tent to stretch my limbs and take a look at the sky. I was particularly anxious about the weather, for I was tired of idleness, and had determined to go out if the evening offered a tolerably fair promise of a fine night. To get a better view of the heavens, I climbed to my accustomed look-out in a comfortable fork near the summit of a neighboring pine, and noted with disgust certain little black shreds of cloud rising slowly above the horizon. To aid my indecision I consulted my dear old friend, John Williams, the Indian, who, after the manner of his kind, stoutly refused to give any definite opinion on the subject. All that I could get out of him was, "Well, dunno; mebbe fine, mebbe wind get up; guess pretty calm, perhaps, in morning. Suppose we go and try, or, p'r'aps, mebbe wait till to-morrow." Finally I decided to go out; for although, if there is the slightest wind, it is impossible to call, yet any wise and prudent man, unless there are unmistakable signs of a storm brewing, will take the chance: for the calling season is short and soon over.

I have said that an absolutely calm night is required for calling, and for this reason: the moose is so wary, that, in coming up to the call, he will invariably make a circle down wind in order to get scent of the animal which is calling him. Therefore, if there is a breath of wind astir, the moose will get scent of the man before the man has a chance of seeing the moose. A calm night is the first thing necessary. Secondly, you must have a moonlight night. No moose will

come up in the day-time. You can begin to call about an hour before sunset, and moose will answer up to say two hours after sunrise. There is very little time, therefore, unless there is bright moonlight. In the third place, I need scarcely observe that to call moose successfully you must find a place near camp where there are moose to call, and where there are not only moose, but bull moose; not only bull moose, but bulls that have not already provided themselves with consorts; for if a real cow begins calling, the rough imitation in the shape of a man has a very poor chance of success, and may as well give it up as a bad job. Fourthly, you must find a spot that is convenient for calling, that is to say, a piece of dry ground, for no human being can lie out all night in the wet, particularly in the month of October, when it freezes hard toward morning. You must have dry ground, well sheltered with trees or shrubs of some kind, and a tolerably open space around it for some distance; open enough for you to see the bull coming up when he is yet at a little distance, but not a large extent of open ground, for no moose will venture out far on an entirely bare exposed plain. He is disinclined to leave the friendly shelter of the trees. A perfect spot, therefore, is not easily found. Such are some of the difficulties which attend moose-calling and render it a most precarious pastime. Four conditions are necessary, and all four must be combined at one and the same time.

Having once determined to go out, preparations do not take long. You have only to roll up a blanket and overcoat, take some tea, sugar, salt, and biscuit, a kettle, two tin pannikins, and a small ax, with, I need scarcely say, rifle and ammunition. The outfit is simple; but the hunter should look to everything himself, for an Indian would leave his head behind if it were loose. A good thick blanket is very necessary, for moose-calling involves more hardship and more suffering from cold than any other branch of the noble science of hunting with which I am acquainted. It is true that the weather is not especially cold at that time of year, but there are sharp frosts occasionally at night, and the moose-caller cannot make a fire by which to warm himself, for the smell of smoke is carried a long way by the slightest current of air. Neither dare he run about to warm his feet, or flap his hands against his sides, or keep up the circulation by taking exercise of any kind, for fear of making a noise. He is sure to have got wet through with perspiration on

his way to the calling place, which of course makes him more sensitive to cold.

So I and the Indian shouldered our packs, and started for the barren, following an old logging road. Perhaps I ought to explain a little what is meant by a "logging road" and a "barren." A logging road is a path cut through the forest in winter, when the snow is on the ground and the lakes are frozen, along which the trunks of trees or logs are hauled by horses or oxen to the water. A logging road is a most pernicious thing. Never follow one if you are lost in the woods, for one end is sure to lead to a lake or a river, which is decidedly inconvenient until the ice has formed; and in the other direction it will seduce you deep into the inner recesses of the forest, and then come to a sudden termination at some moss-covered, decayed pine stump, which is discouraging. A "barren," as the term indicates, is a piece of waste land; but, as all hunting grounds are waste, that definition would scarcely be sufficient to describe what a "barren" is. It means, in Nova Scotia and New Brunswick, an open marshy space in the forest, sometimes so soft as to be almost impassable; at other times composed of good solid hard peat. The surface is occasionally rough and tussocky, like a great deal of country in Scotland.

In Newfoundland, there are barrens of many miles in extent, high, and, comparatively speaking, dry plateaus; but the barrens in the provinces I am speaking of vary from a little open space of a few acres to a plain of five or six miles in length or breadth. There has been a good deal of discussion as to the origin of these "barrens." It appears to me that they must have been originally lakes, which have become dry by the gradual elevation of the land, and through the natural processes by which shallow waters become choked up and filled with vegetable débris. They have all the appearance of dry lakes. They are about the size of the numerous sheets of water that are so frequent in the country. The forest surrounds them completely, precisely in the same way as it does a lake, following all the lines and curvatures of the bays and indentations of its shores; and every elevated spot of dry, solid ground is covered with trees exactly as are the little islands that so thickly stud the surface of the Nova Scotian lakes. Most of the lakes in the country are shallow, and in many of them the process by which they become

filled up can be seen at work. The ground rises considerably in the center of these barrens, which is, I believe, the case with all bogs and peat mosses. I have never measured any of their areas, neither have I attempted to estimate the extent of the curvature of the surface; but on a barren where I hunted last year, of about two miles across, the ground rose so much in the center that when standing at one edge we could see the upper half of the pine trees which grew at the other. The rise appeared to be quite gradual, and the effect was as if one stood on an exceedingly small globe, the natural curvature of which hid the opposite trees.

To return to our calling. We got out upon the barren, or, rather, upon a deep bay or indentation of a large barren, about four o'clock in the afternoon, and made our way to a little wooded island, which afforded us shelter and dry ground, and which was within easy shot of one side of the bay, and so situated with regard to the other that a moose coming from that direction would not hesitate to approach it. The first thing to be done is to make a lair for oneself—a little bed. You pick out a nice sheltered soft spot, chop down a few *sapin* branches with your knife, gather a quantity of dry grass or bracken, and make as comfortable a bed as the circumstances of the case will permit.

Having made these little preparations, I sat down and smoked my pipe while the Indian climbed up a neighboring pine-tree to "call." The only object of ascending a tree is that the sound may be carried further into the recesses of the forest. The instrument wherewith the caller endeavors to imitate the cry of the cow consists of a cone-shaped tube made out of a sheet of birch-bark rolled up. This horn is about eighteen inches in length and three or four in diameter at the broadest end, the narrow end being just large enough to fit the mouth. The "caller" uses it like a speaking-trumpet, groaning and roaring through it, imitating as well as he can the cry of the cow-moose. Few white men can call really well, but some Indians, by long practice, can imitate the animal with wonderful success. Fortunately, however, no two moose appear to have precisely the same voice, but make all kinds of strange and diabolical noises, so that even a novice in the art may not despair of himself calling up a bull. The real difficulty—the time when you require a perfect mastery of the art—is when the bull is close by, suspicious, and

listening with every fiber of its intensely accurate ear to detect any sound that may reveal the true nature of the animal he is approaching. The smallest hoarseness, the slightest wrong vibration, the least unnatural sound, will then prove fatal. The Indian will kneel on the ground, putting the broad end of the horn close to the earth, so as to deaden the sound, and, with an agonized expression of countenance, will imitate with such marvelous fidelity the wailing, anxious, supplicating cry of the cow, that the bull, unable to resist, rushes out from the friendly cover of the trees, and exposes himself to death. Or it may be that the most accomplished caller fails to induce the suspicious animal to show himself; the more ignoble passion of jealousy must then be aroused. The Indian will grunt like an enraged bull, break dead branches from the trees, thrash his birch-bark horn against the bushes, thus making a noise exactly like a moose fighting the bushes with his antlers. The bull cannot bear the idea of a rival, and, casting his prudence to the winds, not unfrequently falls a victim to jealousy and rage.

The hunter calls through his horn, first gently, in case there should be a bull very near. He then waits a quarter of an hour or so, and, if he gets no answer, calls again a little louder, waiting at least a quarter of an hour—or half an hour some Indians say is best —after each attempt.

The cry of the cow is a long-drawn-out melancholy sound, impossible to describe by words. The answer of the bull-moose, on the contrary, is a rather short guttural grunt, and resembles at a great distance the sound made by an ax chopping wood, or that which a man makes when pulling hard at a refractory clay-pipe. You continue calling at intervals until you hear an answer, when your tactics depend upon the way in which the animal acts. Great acuteness of the sense of hearing is necessary, because the bull will occasionally come up without answering at all; and the first indication of his presence consists of the slight noise he makes in advancing. Sometimes a bull will come up with the most extreme caution; at others, he will come tearing up through the woods, as hard as he can go, making a noise like a steam-engine, and rushing through the forest apparently without the slightest fear.

On the particular occasion which I am recalling, it was a most lovely evening. It wanted but about half an hour to sundown, and

all was perfectly still. There was not the slightest sound of anything moving in the forest, except that of the unfrequent flight of a moose-bird close by. And so I sat watching that most glorious transformation scene—the change of day into night; saw the great sun sink slowly down behind the pine trees; saw the few clouds that hovered motionless above me blaze into the color of bright burnished gold; saw the whole atmosphere become glorious with a soft yellow light, gradually dying out as the night crept on, till only in the western sky there lingered a faint glow, fading into a pale cold apple-green, against which the pines stood out as black as midnight, and as sharply defined as though cut out of steel. As the darkness deepened, a young crescent moon shone out pale and clear, with a glittering star a little below the lower horn, and above her another star of lesser magnitude. It looked as though a supernatural jewel —a heavenly pendant, two great diamond solitaires, and a diamond crescent—were hanging in the western sky. After awhile, the moon, too, sank behind the trees, and darkness fell upon the earth.

I know of nothing more enchanting than a perfectly calm and silent autumnal sunset in the woods, unless it be the sunrise, which, to my mind, is more lovely still. Sunset is beautiful, but sad; sunrise is equally beautiful, and full of life, happiness, and hope. I love to watch the stars begin to fade, to see the first faint white light clear up the darkness of the eastern sky, and gradually deepen into the glorious coloring that heralds the approaching sun. I love to see Nature awake shuddering, as she always does, and arouse herself into active, busy life; to note the insects, birds, and beasts shake off slumber and set about their daily tasks.

Still, the sunset is inexpressibly lovely, and I do not envy the condition and frame of mind of a man who cannot be as nearly happy as man can be, when he is lying comfortably on a luxurious and soft couch, gazing in perfect peace on the glorious scene around him, rejoicing all his senses, and saturating himself with the wonderful beauties of a northern sunset.

So I sat quietly below, while the Indian called from the tree-top. Not a sound answered to the three or four long-drawn-out notes with which he hoped to lure the bull. After a long interval he called again, but the same perfect, utter silence reigned in the woods, a silence broken only by the melancholy hooting of an owl, or the imaginary

noises that filled my head. It is extraordinary how small noises become magnified when the ear is kept at a great tension for any length of time, and how the head becomes filled with all kinds of fictitious sounds; and it is very remarkable also how utterly impossible it is to distinguish between a loud noise uttered at a distance and a scarcely audible sound close by. After listening very intently amidst the profound silence of a quiet night in the forest for an hour or so, the head becomes so surcharged with blood, owing, I presume, to all the faculties being concentrated on a single sense, that one seems to hear distant voices, the ringing of bells, and all kinds of strange and impossible noises. A man becomes so nervously alive to the slightest disturbance of the almost awful silence of a still night in the woods, that the faintest sound—the cracking of a minute twig, or the fall of a leaf, even at a great distance—will make him almost jump out of his skin. He is also apt to make the most ludicrous mistakes. Toward morning, about day-break, I have frequently mistaken the first faint buzz of some minute fly, within a foot or so of my ear, for the call of moose two or three miles off.

About ten o'clock, the Indian gave it up in despair and came down the tree; we rolled ourselves up in our rugs, pulled the hoods of our blanket coats over our heads, and went to sleep. I awoke literally shaking with cold. It was still the dead of night, and the stars were shining with intense brilliancy, to my great disappointment, for I was in hopes of seeing the first streaks of dawn. It was freezing very hard, far too hard for me to think of going to sleep again. So I roused the Indian, and suggested that he should try another call or two.

Accordingly, we stole down to the edge of the little point of wood in which we had ensconced ourselves, and in a few minutes the forest was reëchoing the plaintive notes of the moose. Not an answer, not a sound—utter silence, as if all the world were dead! broken suddenly and horribly by a yell that made the blood curdle in one's veins. It was the long, quavering, human, but unearthly scream of a loon on the distant lake. After what seemed to be many hours, but what was in reality but a short time, the first indications of dawn revealed themselves in the rising of the morning star, and the slightest possible paling of the eastern sky. The cold grew almost unbearable.

That curious shiver that runs through nature—the first icy current of air that precedes the day—chilled us to the bones. I rolled myself up in my blanket and lighted a pipe, trying to retain what little caloric remained in my body, while the Indian again ascended the tree. By the time he had called twice it was gray dawn. Birds were beginning to move about and busy squirrels to look out for their breakfast of pine-buds. I sat listening intently, and watching the blank, emotionless face of the Indian as he gazed around him, when suddenly I saw his countenance blaze up with vivid excitement. His eyes seemed to start from his head, his muscles twitched, his face glowed, he seemed transformed in a moment into a different being. At the same time he began, with the utmost celerity, but with extreme caution, to descend to the ground. He motioned to me not to make any noise, and whispered that a moose was coming across the barren and must be close by. Grasping my rifle, we crawled carefully through the grass, crisp and noisy with frost, down to the edge of our island of woods, and there, after peering cautiously around some stunted juniper bushes, I saw standing, about sixty yards off, a bull-moose. He looked gigantic in the thin morning mist which was beginning to drift up from the surface of the barren. Great volumes of steam issued from his nostrils, and his whole aspect, looming in the fog, was vast and almost terrific. He stood there, perfectly motionless, staring at the spot from which he had heard the cry of the supposed cow, irresolute whether to come on or not. The Indian was anxious to bring him a little closer, but I did not wish to run the risk of scaring him; and so, taking aim as fairly as I could, considering I was shaking all over with cold, I fired and struck him behind the shoulder. He plunged forward on his knees, jumped up, rushed forward for about two hundred yards, and then fell dead at the edge of the heavy timber on the far side of the barren.

We went to work then and there to skin and clean him, an operation which probably took us an hour or more; and having rested ourselves a few minutes, we started off to take a little cruise round the edge of the barren and see if there were any caribou on it. I should explain that "cruising" is, in the provinces, performed on land as well as at sea. A man says he has spent all summer "cruising" the woods in search of pine timber, and if your Indian wants

you to go out for a walk, he will say, "Let us take a cruise around somewhere." Accordingly, we trudged off over the soft, yielding surface of the bog, and, taking advantage of some stunted bushes, crossed to the opposite side, so as to be well down wind in case any animal should be on it. The Indian then ascended to the top of the highest pine-tree he could find, taking my glasses with him, and had a good look all over the barren. There was not a thing to be seen. We then passed through a small strip of wood, and came out upon another plain, and there, on ascending a tree to look round, the Indian espied two caribou feeding toward the timber. We had to wait some little time till they got behind an island of trees, and then, running as fast as the soft nature of the ground would permit, we contrived to get close up to them just as they entered the thick woods, and, after an exciting stalk of about half an hour, I managed to kill both.

Having performed the obsequies of the chase upon the two caribou, we returned to our calling-place. By this time it was about noon; the sun was blazing down with almost tropical heat. We had been awake the greater part of the night, and had done a hard morning's work, and felt a decided need for refreshment. In a few minutes we had lighted a little fire, put the kettle on to boil, and set the moose kidneys, impaled on sharp sticks, to roast by the fire; and with fresh kidneys, good strong tea, plenty of sugar and salt, and some hard biscuit, I made one of the most sumptuous breakfasts it has been my lot to assist at.

Breakfast over, I told the Indian to go down to camp and bring up the other men to assist in cutting up and smoking the meat. As soon as he had departed, I laid myself out for a rest. I shifted my bed—that is to say, my heap of dried bracken and pine-tops—under the shadow of a pine, spread my blanket out, and lay down to smoke the pipe of peace in the most contented frame of mind that a man can ever hope to enjoy in this uneasy and troublesome world. I had suffered from cold and from hunger—I was now warm and well fed. I was tired after a hard day's work and long night's vigil, and was thoroughly capable of enjoying that greatest of all luxuries—sweet repose after severe exercise. The day was so warm that the shade of the trees fell cool and grateful, and I lay flat on my back, smoking my pipe, and gazing up through the branches into a per-

fectly clear, blue sky, with occasionally a little white cloud like a bit of swan's-down floating across it, and felt, as I had often felt before, that no luxury of civilization can at all compare with the comfort a man can obtain in the wilderness. I lay smoking till I dropped off to sleep, and slept soundly until the men, coming up from camp, awoke me.

Such is a pretty fair sample of a good day's sport. It was not a very exciting day, and I have alluded to it chiefly because the incidents are fresh in my mind. The great interest of moose-calling comes in when a bull answers early in the evening, and will not come up boldly, and you and the bull spend the whole night trying to outwit each other. Sometimes, just when you think you have succeeded in deceiving him, a little air of wind will spring up; he will get scent of you, and be off in a second. Sometimes a bull will answer at intervals for several hours, will come up to the edge of the open ground, and there stop and cease speaking. You wait, anxiously watching for him all night, and in the morning, when you examine the ground, you find that something had scared him, and that he had silently made off, so silently that his departure was unnoticed. It is marvelous how so great and heavy a creature can move through the woods without making the smallest sound; but he can do so, and does, to the great confusion of the hunter.

Sometimes another bull appears upon the scene, and a frightful battle ensues; or a cow will commence calling, and rob you of your prey; or you may get an answer or two in the evening, and then hear nothing for several hours, and go to sleep and awake in the morning to find that the bull had walked calmly up to within ten yards of you. Very frequently you may leave camp on a perfectly clear, fine afternoon, when suddenly a change will come on, and you may have to pass a long, dreary night on some bare and naked spot of ground, exposed to the pitiless pelting of the storm. One such night I well remember, last fall. It rained and thundered and blew the whole time, from about eight o'clock, until daylight at last gave us a chance of dragging our chilled and benumbed bodies back to camp. Fortunately such exposure, though unpleasant, never does any one any harm in the wilderness.

Occasionally, a moose will answer, but nothing will induce him to come up, and in the morning, if there is a little wind, you can resort

to the only other legitimate way of hunting the moose, namely, "creeping," or "still hunting," as it would be termed in the States, which is, as nearly as possible, equivalent to ordinary deer-stalking.

After the rutting season the moose begin to "yard," as it is termed. I have seen pictures of a moose-yard, in which numbers of animals are represented inside and surrounded by a barrier of snow, on the outside of which baffled packs of wolves are clamorously howling; and I have seen a moose-yard so described in print as to make it appear that a number of moose herd together and keep tramping and tramping in the snow to such an extent that by mid-winter they find themselves in what is literally a yard—a hollow, bare place, surrounded by deep snow. Of course, such a definition is utterly absurd. A moose does not travel straight on when he is in search of food, but selects a particular locality, and remains there as long as the supply of provisions holds out; and that place is called a yard.

Sometimes a solitary moose "yards" alone, sometimes two or three together. Occasionally, as many as half a dozen may be found congregated in one place. When a man says he has found a "moose-yard," he means that he has come across a place where it is evident, from the tracks crossing and recrossing and intersecting each other in all directions, and from the signs of browsing on the trees, that one or more moose have settled down to feed for the winter. Having once selected a place or "yard," the moose will remain there till the following summer, if the food holds out and they are not disturbed by man. If forced to leave their "yard," they will travel a long distance—twenty or thirty miles—before choosing another feeding-ground. After the rutting season, moose wander about in an uneasy state of mind for three weeks or so, and are not all settled down till the beginning of November.

In "creeping," therefore, or stalking moose, the first thing to be done is to find a moose-yard. You set out early in the morning, in any direction you may think advisable, according to the way the wind blows, examining carefully all the tracks that you come across. When you hit upon a track, you follow it a little way, examining it and the ground and trees, to see if the animal is traveling or not. If you find that the moose has "yarded," that is to say, fed, and you can come across evidences of his presence not more than a couple of

days or so old, you make up your mind to hunt that particular moose.

The utmost caution and skill are necessary. The moose invariably travels down-wind some little distance before beginning to feed, and then works his way up, browsing about at will in various directions. He also makes a circle down-wind before lying down, so that, if you hit on a fresh track and then follow it, you are perfectly certain to start the animal without seeing him. You may follow a moose track a whole day, as I have done before now, and finally come across the place where you started him, and then discover that you had passed within fifty yards of that spot early in the morning, the animal having made a large circuit and lain down close to his tracks. The principle, therefore, that the hunter has to go upon is to keep making small semicircles down-wind, so as to constantly cut the tracks and yet keep the animal always to windward of him. Having come across a track and made up your mind whether it is pretty fresh, whether the beast is a large one worth following, and whether it is settled down and feeding quietly, you will not follow the track, but go down-wind and then gradually work up-wind again till you cut the tracks a second time. Then you must make out whether the tracks are fresher or older than the former, whether they are tracks of the same moose or those of another, and leave them again and work up, and cut them a third time; and so you go on gradually, always trimming down-wind and edging up-wind again, until, finally, you have quartered the whole ground.

Perhaps the moose is feeding upon a hard-wood ridge of beech and maples of, say, two or three miles in length and a quarter of a mile in width. Every square yard you must make good, in the way I have endeavored to describe, before you proceed to go up to the moose. At length, by dint of great perseverance and caution, you will have so far covered the ground that you will know the animal must be in some particular spot. Then comes the difficult moment. I may say at once that it is mere waste of time trying to creep except on a windy day, even with moccasins on; and it is of no use at any time trying to creep a moose unless you are provided with soft leather moccasins. No human being can get within shot of a moose on a still day; the best time is when windy weather succeeds a heavy fall of rain. Then the ground is soft, the little twigs strewed about bend instead

of breaking, and the noise of the wind in the trees deadens the sound of your footsteps. If the ground is dry, and there is not much wind, it is impossible to get near the game. When you have determined that the moose is somewhere handy,—when you come across perfectly fresh indications of his presence,—you proceed inch by inch; you must not make the smallest noise; the least crack of a dead branch or of a stick under foot will start the animal. Especially careful must you be that nothing taps against your gun-stock, or that you do not strike the barrel against a tree, for, naturally, any such unusual sound is far worse than the cracking of a stick. If, however, you succeed in imitating the noiseless movements and footsteps of your Indian, you will probably be rewarded by seeing him presently make a "point" like a pointer dog. Every quivering fiber in his body proves his excitement. He will point out something dark to you among the trees. That dark mass is a moose, and you must fire at it, without being too careful what part of the animal you are going to hit, for probably the moose has heard you, and is only waiting a second before making up his mind to be off.

Generally speaking, the second man sees the moose first. The leader is too much occupied in looking at the tracks—in seeing where he is going to put his foot down. The second man has only to tread carefully in the footsteps of the man preceding him, and is able to concentrate his attention more on looking about. The moment you spy or hear the animal, you should imitate the call of a moose,—first, to attract the attention of the animal, which, if it has not smelt you, will probably stop a second to make sure what it is that has frightened him; secondly, to let the Indian in front know that the game is on foot. Moose-creeping is an exceedingly difficult and exciting pastime. It requires all a man's patience, for, of course, you may travel day after day in this way without finding any traces of deer. To the novice it is not interesting, for, apparently, the Indian wanders aimlessly about the woods without any particular object. When you come to understand the motive for every twist and turn he makes, and appreciate the science he is displaying, it becomes one of the most fascinating pursuits in which the sportsman can indulge. Sometimes one may be in good luck and come across a moose in some glade or "interval," the result of the labors of former generations of beavers. An "interval" is the

local term for natural meadows, which are frequently found along the margins of streams. Beavers have done great and useful work in all these countries. The evidences of their labors have far outlived the work of aboriginal man. They dam up little streams and form shallow lakes and ponds. Trees fall in and decay; the ponds get choked with vegetation, fill up, and are turned into natural meadows of great value to the settler. Beavers have played an important part in rendering these savage countries fit for the habitation of civilized man.

The moose may also be run down in winter-time on snow-shoes. This may be called partly a legitimate, and partly an illegitimate, mode of killing the animal. If the snow is not very deep, the moose can travel, and to come up with him requires immense endurance on the part of a man, but no skill except that involved in the art of running on snow-shoes. You simply start the animal and follow after him for a day, or sometimes two or three days, when you come up with him and walk as close as you like and shoot him.

If the snow lies very deep in early spring, moose may be slaughtered with ease. The sun thaws the surface, which freezes up again at night and forms an icy crust strong enough to support a man on snow-shoes, or a dog, but not nearly strong enough to support a moose. Then they can be run down without trouble. You find your moose and start a dog after him. The unfortunate moose flounders helplessly in the snow, cutting his legs to pieces, and in a very short time becomes exhausted, and you can walk up to him, knock him on the head with an ax, or stick him with a knife, as you think best. Hundreds and hundreds of moose have been slaughtered in this scandalous manner for their hides alone. The settlers also dig pits for them and snare them, both of which practices, I need hardly say, are most nefarious. There is nothing sportsmanlike about them, and they involve waste of good meat, because, unless a man looks to the snare every day (which these men never do), he runs the chance of catching a moose and finding the carcass unfit for food when he revisits the place. I shall not describe the method of snaring a moose, for fear some reader who has followed me thus far might be tempted to practice it, or lest it might be supposed for a moment that I had ever done such a wicked thing myself.

Many men prefer caribou-hunting to moose-hunting, and I am not sure that they are not right. The American caribou is, I believe, identical with the reindeer of Europe, though the American animal grows to a much larger size and the males carry far finer horns. The does have small horns also. I believe the caribou is the only species of deer marked by that peculiarity. Caribou are very fond of getting out on the lakes as soon as the ice will bear, and feeding round the shores. They feed entirely on moss and lichens, principally on the long gray moss, locally known as "old men's beards," which hangs in graceful festoons from the branches of the pines, and on the beautiful purple and cream-colored caribou moss that covers the barrens. They are not very shy animals, and will venture close to lumber camps to feed on the moss which grows most luxuriantly on the tops of the pines which the ax-men have felled. Caribou cannot be run down, and the settlers rarely go after them. They must be stalked on the barrens and lakes, or crept up to in the woods, precisely in the same manner as the moose.

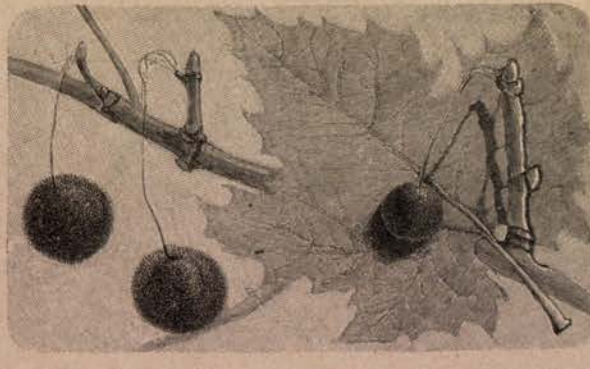
Such is a brief outline of some Canadian sports. Life in the woods need not be devoted entirely to hunting, but can be varied to a great extent by fishing and trapping. The streams and lakes teem with trout, and the finest salmon-fishing in the world is to be found in New Brunswick and on the north shore of the gulf. In Lower Canada there is still a good deal of fur to be found. In New Brunswick and Nova Scotia beavers are almost extinct, and marten, mink, lynx, otter, and other valuable fur-bearing animals are comparatively scarce. It would be hard, I think, for a man to spend a holiday more pleasantly and beneficially than in the Canadian woods. Hunting leads him into beautiful scenery; his method of life induces a due contemplation of nature and tends to wholesome thought. He has not much opportunity for improving his mind with literature, but he can read out of the great book of nature, and find "books in the running brooks, sermons in stones, and good in everything." If he has his eyes and ears open, he cannot fail to take notice of many interesting circumstances and phenomena; and if he has any knowledge of natural history, every moment of the day must be suggesting something new and interesting to him. A strange scene, for example, which came within my observation last year, completely

puzzled me at the time and has done so ever since. I was in Nova Scotia in the fall, when one day my Indian told me that in a lake close by all the rocks were moving out of the water, a circumstance which I thought not a little strange. However, I went to look at the unheard-of spectacle, and sure enough there were the rocks apparently all moving out of the water on to dry land. The lake is of considerable extent, but shallow, and full of great masses of rock. Many of these masses appear to have traveled right out of the lake, and are now high and dry some fifteen yards above the margin of the water. They have plowed deep and regularly defined channels for themselves. You may see them of all sizes, from blocks of, say, roughly speaking, six or eight feet in diameter, down to stones which a man could lift. Moreover, you find them in various stages of progress: some a hundred yards or more from shore, and apparently just beginning to move; others half way to their destination, and others, again, as I have said, high and dry above the water. In all cases there is a distinct groove or furrow which the rock has clearly plowed for itself. I noticed one particularly good specimen, an enormous block, which lay some yards above high-water mark. The earth and stones were heaped up in front of it to a height of three or four feet. There was a deep furrow, the exact breadth of the block, leading down directly from it into the lake, and extending till it was hidden from my sight by the depth of the water. Loose stones and pebbles were piled up on each side of this groove in a regular clearly defined line. I thought at first that, from some cause or other, the smaller stones, pebbles, and sand had been dragged down from *above*, and consequently had piled themselves up in *front* of all the large rocks too heavy to be moved, and had left a vacant space or furrow behind the rocks. But if that had been the case, the drift of moving material would of course have joined together again in the space of a few yards behind the fixed rocks. On the contrary, these grooves or furrows remained the same width throughout their entire length, and have, I think, undoubtedly been caused by the rock forcing its way up through the loose shingle and stones which compose the bed of the lake. What power has set these rocks in motion it is difficult to decide. The action of ice is the only thing that might explain it; but how ice could exert itself in that special manner, and why, if ice is the cause

of it, it does not manifest that tendency in every lake in every part of the world, I do not pretend to comprehend.

My attention having been once directed to this, I noticed it in various other lakes. Unfortunately, my Indian only mentioned it to me a day or two before I left the woods. I had not time, therefore, to make any investigation into the subject. Possibly some of my readers may be able to account for this, to me, extraordinary phenomenon.

Even from the point of view of a traveler who cares not for field sports, Nova Scotia and New Brunswick, and, in fact, all Canada, is a country full of interest. It is interesting for many reasons which I have not space to enter into now, but especially so as showing the development of what, in future, will be a great nation. For whether in connection with this country, or as independent, or as joined to the United States, or any portion of them, that vast region which is now called British North America will assuredly some day support the strongest, most powerful, and most masterful population on the continent of America.



CARIBOU-HUNTING.

By CHARLES C. WARD.

TO determine accurately the geographical distribution of an animal of such wandering habits as the caribou, or American reindeer (*Cervus tarandus*—Linn.; Rangifer Caribou—Audubon and Bachman), is extremely difficult. Every few years make a change. One year finds the species receding from haunts previously occupied and encroaching upon grounds hitherto unfrequented; and in some districts, from various causes, we find them exterminated.

I may say, however, that the caribou largely inhabits Labrador and Newfoundland, still exists in considerable numbers in the province of New Brunswick, in the wilderness regions of the Restigouche, in the country watered by the upper south-west branch of the Miramichi, also on Cairns River—another branch of the Miramichi. He is also abundant at the head-waters of Green River, in the county of Madawaska. In Queens County, he is found at head of Grand Lake, Salmon River. In Kent County, he is again met with on the Kishanaguak and Kishanaguaksis, also frequently on the Bathurst road, between Bathurst and Chatham. A few years ago, the animals were quite numerous in Charlotte County, and are still occasionally met with. In the adjoining province of Nova Scotia their numbers are gradually decreasing, their strongholds at present being confined to the Cobequid Mountains and the uplands of Cape Breton. Going westward and south of the St. Lawrence, the caribou is again met with in Rimouski, his haunts extending southward along the borders of the State of Maine and the country south of the city of Quebec to New Hampshire. The moose is found with him all through this

CARIBOU BARRENS.

district, and also the Virginia deer in its southern part. North of the Ottawa and St. Lawrence, the caribou ranges all through the vast forest regions as far as the southern limits of Hudson's Bay, and is abundant in the north-west territories, as far as the McKenzie River, and is also found inhabiting the high lands of British Columbia.

In the State of Maine they are met with in tolerable abundance, and if the existing game-laws are strictly enforced, we may hope that their numbers will not be diminished. In the wilderness tracts of that State there are vast stretches of barrens, amply provided with the reindeer lichen and interspersed with innumerable lakes and uplands, constituting a country admirably adapted to the habits of the caribou. It has been said that the caribou extends along the border west of Lake Superior to the Pacific; but, as late as 1874, none were found along the border of Dakota and Montana. If the species reaches the wooded region at and west of the Rocky Mountains, its presence does not seem to be well attested. It is, however, said to occur in Washington Territory, but I may add that a competent authority doubts the existence of the caribou in the United States west of the Red River of the North. Within the last year, the presence of the caribou in Minnesota and Wisconsin has been authenticated.

The prevailing color of the caribou is a dark fawn inclining to gray, darkest at the tips of the hairs, on the sides, ears, face, and

outside of the legs, and fading to almost pure white on the neck and throat. The under part of the body and tail is white, and a ring of white encircles the legs just above the hoof. Some specimens have a light spot on the shoulders and a black patch on the mouth. It is not uncommon to find aged and full-grown animals adorned with a flowing mane, which adds greatly to the grace and beauty of their appearance. In midwinter I have noticed departures from the above description, the coats of some animals inclining more to light gray; and in others, one half of the body was very light gray, and the other half much darker. In particular, I remember having killed a doe of extraordinary size and beauty of form, whose general color was an exceedingly rich dark brown, and entirely different from that of any other caribou in the herd.

The heads and antlers of the caribou present much diversity of form, and seldom are any two found alike. In the same herd, I have seen heads very like that of a two-year-old colt; then, again, others had pronounced Roman noses, the whole head appearing much longer. In some instances, the palmation extends throughout the horns; while in others, such as the Labrador caribou, it is often confined to the tines at the top of the horn, the main stem being nearly round. Again, we find in the caribou inhabiting Newfoundland horns of very great size, perfect in palmation, and in many cases having both brow antlers developed.

WOODLAND CARIBOU HOOFS.

The construction of the caribou's hoof differs from that of any other animal of the deer tribe, and is wonderfully adapted to the services it is required to perform, and enables the animal to travel in deep snows, over frozen lakes and icy crusts, when the moose and deer are confined to their yards and at the mercy of their foes. Toward the end of the season, the frog begins to be absorbed, and in the month of December is entirely so; at the same time, the hoof expands and becomes concave, with sharp and very hard, shell-like edges.

The hoof figured in this paper is drawn from nature, and measures fourteen inches in circumference, five inches in diameter, and has a lateral spread of ten inches. A full-grown caribou stands nearly five feet at the shoulder, and weighs from four hundred to four hundred and fifty pounds.

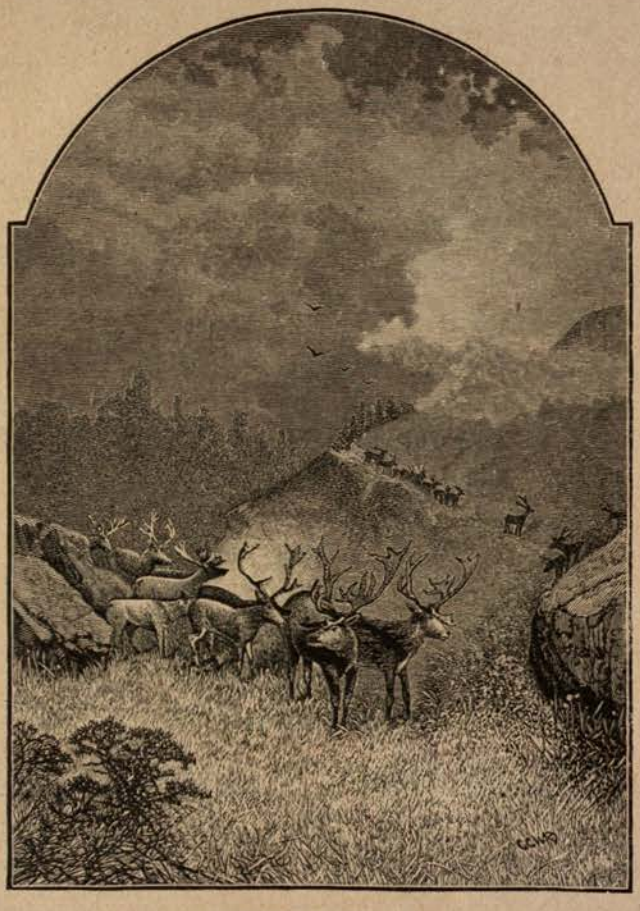
The animal is very compact in form, possessed of great speed and endurance, and is a very Ishmaelite in its wandering habits; changing, as the pest of flies draws near, from the low-lying swamps and woods where its principal article of diet, the *Cladonia rangiferina*, or reindeer lichen, abounds, to the highest mountain fastnesses; then again, when the cold nights give warning of the changing season, descending to the plains.

The rutting season begins early in the month of September; the antlers then have attained their full growth, and the animals engage in fierce conflicts, similar to those indulged in by the moose, and frequently with as tragic an ending. The does bring forth one, and sometimes two fawns in the month of May; and bucks, does, and the young herd together in numbers varying from nine or ten individuals to several hundreds.

Horns are common to both sexes, but the horns of the bucks are seldom carried later than the month of December, while the does carry theirs all winter, and use them to defend the fawns against the attacks of the bucks. Both sexes use their hoofs to clear away the snow in searching for mosses on the barrens. In their biennial migrations, they form well-defined tracks or paths, along which the herds travel in Indian file. I have often studied their habits on the extensive caribou barrens between New River and the head of Lake Utopia, in Charlotte County, New Brunswick. These barrens are about sixteen miles in extent, and marked with well-defined trails, over which the animals were constantly passing and repassing, here and there spending a day where the lichens afforded good living, then away again on their never-ending wanderings.

A friend of mine, who visited Newfoundland on an exploring expedition, informs me that there the caribou holds almost exclusive domain over an unbroken wilderness of nearly thirty thousand square miles, in a country wonderfully adapted to his habits, and bountifully supplied with his favorite food—the reindeer lichen.

The caribou is possessed of much curiosity, and does not readily



CARIBOU MIGRATING.

take alarm at what he sees. Where his haunts have been unmolested, he will unconcernedly trot up within range of the rifle. I am inclined to believe that a great deal of this apparent fearlessness is due to defective vision. If this is so, he is compensated by having a marvelous gift of scent, quite equal, if not superior, to that of the moose. And well for the caribou that he is thus gifted. The wolf follows the herds throughout all their wanderings. On the plains or on the hills, where the poor caribou retire to rear their young, he is constantly lurking near, ready to pounce on any straggler, or—if in sufficient numbers—to boldly attack the herd.

The woodland caribou is very swift, and cunning in devices to escape his pursuers. His gait is a long, swinging trot, which he performs with his head erect and scut up; and there is no animal of the

ATTACKED BY A WOLF.

deer tribe that affords better sport or more delicious food when captured. The wandering habits of the caribou make it very uncertain where one will fall in with him, even in his accustomed and well-known haunts. When once started, the chase is sure to be a long one and its results doubtful; in fact, so much so that an old hunter seldom follows up a retreating herd, but resorts to strategy and tries to head them off, or at once proceeds by the shortest way to some other barren in hopes of finding them there.

It seems to be a mooted question whether the barren-ground caribou *(R. Grœnlandicus)* found inhabiting the Arctic regions and shores of Hudson's Bay is another species, or only a variety of the woodland caribou. The barren-ground caribou is a much smaller animal, and seldom exceeds one hundred and fifty pounds weight, while large specimens of the woodland caribou weigh nearly five hundred pounds.

The caribou is very fond of the water, is a capital swimmer, and in jumping he is more than the equal of any other deer. His advent-

AFLOAT ON A CAKE OF ICE.

urous disposition, no doubt, in some degree influences the geographical distribution of the species. In the month of December, 1877, a caribou was discovered floating out to sea on a cake of ice near Dalhousie, on the Restigouche River in New Brunswick, and was captured alive by some men who put off to him in a boat.

It is said that, in very severe seasons, large numbers of caribou cross from Labrador to Newfoundland on the ice. His admirably constructed hoof, with its sharp, shell-like, cutting edges, enables him to cross the icy floes; when traveling in deep snow, its lateral expansion prevents him from sinking.

At one time the Indians were as great adepts at calling the woodland caribou as they are in the present day in deluding the moose. My Indian friend Sebatis is the only Indian I know who can imitate the calls of the caribou, and he has for a long time given up this manner of hunting. He informs me that, from being so much hunted and molested in their haunts, the caribou have become much more timid and wary even during the rutting season, and also seem to be much more critical of the sounds produced by the birch-bark call, and consequently very seldom respond thereto.

The quiet gray color of the caribou is well adapted to conceal his presence from the hunter, and it requires an educated eye to pick out his form on the heathy barren, where everything assimilates to him

in color; and, were it not for occasional effects of light disclosing his position, the hunter might frequently pass within easy shot without seeing him. The Indians are so well aware of this that they always approach a barren with extreme caution, always traveling down wind, and never disconcerted if game is not sighted at once. Nor is the case improved when one comes to hunt for them in the forest; there, the gray tree-trunks and tangled undergrowth make it extremely difficult to see them.

CARIBOU CROSSING A FROZEN LAKE.

The caribou, whatever may be his need for haste, seldom bounds or gallops, except for a few jumps when first he spies his enemy, but drops into his accustomed trot, which carries him over the ground with great rapidity, and then, no matter how old a hand the hunter may be, nothing but the admirable skill in venery of his Indian guide will afford him the slightest chance of coming up with the game again.

The indifference or curiosity with regard to the noise of fire-arms exhibited by the caribou often stands the hunter in good stead and affords him a chance for a second shot, should his first prove ineffectual; for it is not uncommon for a herd to stand stock-still on hearing the report of a gun, even when one of their number has fallen a victim thereto. The pause is but for an instant, and the hunter must be quick to take advantage of it, or his chance will be gone before he is aware of it; for, recovering quickly from the shock, or alarm, or whatever it may be, the herd will dash off at a rattling pace.

A caribou, if not mortally wounded, will endeavor to keep up with the herd, and will travel a long way without giving out. If near the sea-coast, the wounded animal seeks it to die, and so is often found by the hunter. In such cases the skill of the Indian again comes in play, and he will follow the track of the wounded animal, readily picking it out from all the others, and seldom failing to run it down. The Indians say that the caribou likes to feed on sea-weed, and goes to the coast in the spring and fall of the year for that purpose.

Once upon a time, not so long ago as when "little birds built their nests in old men's beards," but quite long enough to make one regret the days when caribou were plenty on all the barrens in Charlotte County, New Brunswick, the writer, in company with his Indian friend Sebatis and an old Indian named Tomah, traveled all day in pursuit of a herd of caribou, and after losing much time lying in ambush, behind a big bowlder, were suddenly overtaken by night-fall, which, in the short November days, shuts down without warning.

"How far to camp, Sebatis?" I inquired.

"Well, s'pose daylight, about five miles; but so dark now, you see, makes it good deal further."

"Can you find the camp?"

"Find 'im camp? Sartin; but take good while, so dark, can't see nothin' 't all; tumble down good deal, you see, so many win'falls; then may be get in swamp besides."

Had daylight given us the opportunity of selecting a camping-place, we could not have found a spot better suited to our purpose than the grove of grand old firs and hemlocks that hemmed us in on every side and sheltered us with broad, spreading branches. In front we had a forest lake; on the outskirts of our stronghold a plentiful supply of hard wood stood ready for the axe which Tomah was just releasing from its cover of leather.

The darkness and silence of these old woods were appalling, and as I stood leaning on the old tree against which we had stacked our rifles, I gladly welcomed the quick strokes of Tomah's axe, that was already dealing death-blows to the birches and maples.

Sebatis had gone off in search of dry wood to start the fire. I had not heard him return, and was watching a curious object moving about in the gloom with something like the actions of a bear. Pres-

ently it stopped, and seemed to be squatting on its haunches; then there came a curious, crackling sound, like the crunching of bones; then a faint light, gradually increasing in brightness and volume until the surroundings began to take form, and long shadows crept stealthily past me, and the object which I had mistaken for a bear arose upon his legs, and quietly observed:

"Pretty good fire by-em-by, when Tomah fetch dry hard wood;" then tramped off to assist Tomah in carrying in the fire-wood.

"Now, then, best cook supper first," said Sebatis; "then make 'im bough bend; too hungry now."

"All right, Sebatis; but how are you going to boil the water for the tea?"

"Well, sartin, we don't have no kettle; have boil 'im water in birch bark; make kin' of box, you see."

"I don't believe you can do it."

"You don't 'lieve it? Well, by t'unders, I show you pretty quick, when Tomah fetch bark."

And show me he did; and better tea I never tasted than that brewed by Sebatis in his kettle of birch bark, and served in little cups of the same material, deftly fashioned by Tomah.

The frosts of winter had not yet sealed the forest lakes, and the night was unusually mild,—so much so, indeed, that Sebatis predicted a sudden change ere long.

During the lulls in the talk, I fancied that I heard the notes of a bird, but did not allude to it, as the sound might have been caused by steam escaping from one of the huge logs piled on the fire.

"Just so I told you," remarked Sebatis, as he arose to get a light for his pipe, "big snow-storm comin'."

"Why do you think so, Sebatis?"

"I hear 'im wa-be-pe singin' just now; that always sign storm comin'."

"Is wa-be-pe a bird?"

"Yes; wa-be-pe little bird; got kin' of small little spots all over."

"Does it sing at night?"

"Always; sings best when moonlight; then he sing once every hour all night; s'pose he sing dark night, sign storm comin'."

"Is he like any of the birds that were about the camp yesterday?"

No, he don't 'long here 't all, only summer time; this time year most always gone away warm country somewheres; s'pose he don't go pretty quick, sartin get froze."

"S'pose all han's stop talkin', may be chance hear wa-be-pe again," said Tomah.

Taking up a position far enough away to get rid of the noise made by the fire, I waited patiently for wa-be-pe. After listening intently for a few moments, I heard four inexpressibly mournful, bell-like notes, uttered with marked distinctness, and surprisingly like the first four notes of "Auld Lang Syne." On reflection, I became impressed with the idea that the notes of this bird were exactly like the first notes of the song of the white-throated finch; and after consultation with Sebatis, I was convinced that I had placed the nocturnal songster correctly. At the first dawn of day, after tightening our belts a hole or two, by way of breakfast, as the Indians facetiously remarked, we started to pick up the trail of the caribou. During the night, several inches of light snow had fallen, and the storm still continued.

"Which way, Sebatis?"

"Try back on big barren; then, s'pose we don't find 'im fresh track, go right camp 'fore snow gets too deep; you see we don't have no snow-shoes, make it pretty hard walkin' by-em-by."

The storm was increasing every moment, and the light snow drifting rapidly before the rising wind, as, tramping in Indian file, we approached the confines of the big barren. The drift was so heavy on the barren that it was hard work to make headway against it, and I had just turned to regain my wind when I heard Tomah ejaculate in Indian:

"Megahlip! Chin-e-ga-bo!" (Caribou—be careful.)

The words were hardly spoken, when down the wind came a herd of caribou, trotting at a terrific pace, with head and scut up, and sending the snow in clouds on every side. I tried to get a shot, but was not quick enough. "Bang!" to right of me—"Bang!" to left of me, from the smooth-bores of Sebatis and Tomah, and all is smoke and drifting snow, out of which I get a glimpse of a head or horns, then the full figure of a fast trotting caribou, and last a noble buck wildly plunging in the flying *poudre*—a victim to the fire of the Indians.

"Come, Tomah, be quick! help butcher caribou. No time lose

BRINGING IN THE CARIBOU.

gettin' camp; by-em-by pretty hard chance get there, storm so heavy, you see," said Sebatis, as he stripped off the hide of the caribou.

In a few moments, the venison intended for the camp was cut, apportioned into loads, and the rest of the animal securely *cached*, to be brought in when wanted. Then we hastened to get off the barren and into the shelter of the woods, where we could draw a free breath unoppressed by the terrible drift.

As the storm promised to be very heavy, we lost no time in gaining the protection of our camp.

"Now then," said Sebatis, as he dropped his load on arriving at camp, "all han's get fire-wood ready, stan' big snow-storms; by t'unders, pretty lucky we get 'im that caribou."

"Who kill 'im that caribou?" inquired Tomah; "two shots fired."

I had been dreading this for some time, but Sebatis cleverly evaded the question, and prevented the endless discussion sure to follow, by facetiously replying:

"Well, I guess bullet kill 'im, sartin."

Fortunately, in the hurry of skinning the caribou and cutting up the venison, they either forgot, or had not time to examine whether there was more than one bullet-hole in the skin; and as the latter, probably, would not be recovered until we were on the home-trail, I flattered myself that the discussion would not be revived. However, in this I was mistaken, as will be seen in the sequel.

In appearance, no two men could differ more widely than my two henchmen. Sebatis stood six feet and two inches in his moccasins, had clear-cut features, and was possessed of infinite patience and good humor. Under severe provocation, his temper was apt to be short, but it was over quickly, and he never sulked. Tomah was very short in stature, bow-legged, and had a countenance terrible to look upon, the fierce expression of his restless eyes indicating unmistakably his savage ancestry; and yet, withal, he was not an ill-tempered man; and the deep, tragic tones in which he spoke, even when saying the most commonplace things, made some of his utterances irresistibly comical. His friendship for Sebatis was of long standing, and they got on very well together, except when a dispute arose about the shooting of a moose or caribou. At such times my ingenuity was taxed to prevent a fight. Soon their united efforts as axe-men, with my aid in carrying in, accumulated such a goodly pile of hard wood as enabled us to laugh at the howling storm.

"Sartin I think, no chance hunt 'im caribou to-morrow; always bad snow-shoein' when snow so light," said Sebatis, as he shook off the snow from his clothes and prepared to cook our dinner of fat caribou steaks.

"Sebatis, where are our little friends, the birds? I haven't seen one since our return to camp."

"You see, hide somewhere when storm so heavy. S'pose sunshine, you see 'im comin': ah-mon-a-tuk (cross-bill), kich-e-ge-gelas (chickadee), ump-kanusis (moose-bird), an' ki-ha-neas (red-poll linnet)."

Early next morning Tomah was absent, and I asked Sebatis where he was.

"Gone away somewhere 'bout daylight," he replied; "try find 'im sign caribou, may be."

At noon, Tomah marched into camp, bringing with him, to my horror, the head and skin of the caribou slain the previous day.

"Who kill 'im this caribou? Only one ball-hole in skin!" he said, defiantly, and in his deepest bass, as he deposited his spoils on the snow.

"I fire right on his head," said Sebatis, springing to his feet.

"Well, you miss him, sartin. Bullet strike 'im on ribs jus' where I fire," rejoined Tomah.

"Sartin, you tell 'im big lie. I don't miss 'im 't all," returned Sebatis, fiercely, as he unrolled the skin to examine for himself. His search disclosed but one bullet-hole, and that was on the side, just as Tomah stated.

After carefully examining the skin, I turned my attention to the head, and was about to give up in despair when I observed that one of the tines had been completely carried away close to the main stem.

"Here's where your ball struck," I said to Sebatis, pointing out the recent fracture on the horn.

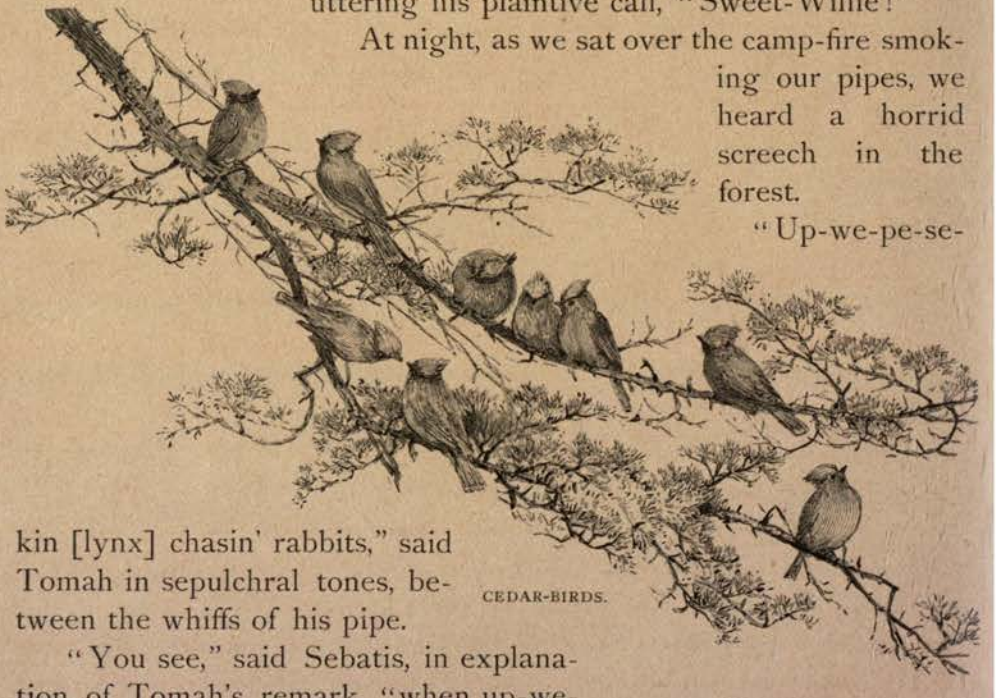
"Sartin, that's true," said Sebatis. "I know I didn't miss 'im 't all."

"Always Sebatis come out pretty well. S'pose nobody else fire, sartin no caribou-steak breakfast this mornin'," growled Tomah.

In the afternoon, the sun shone out bright and warm, and our pert little friends, the birds, shyly renewed our acquaintance. The tameness of these forest birds is ever a source of delight to me. It is quite common to see cross-bills, pine-finches, chickadees, and red-polls all picking up crumbs together at one's feet; and often after a few days' acquaintance they become so familiar that they will accept food from the hand,—bread-crumbs, bits of raw meat; and even salt pork is readily accepted. In fact, nothing seems to come amiss to the little beauties, and they evidently enjoy the change from the dry cones and buds which form the staple of their winter diet.

It seems ungrateful to single out any one bird where all are so tame, but I think that I must give the palm in this respect to my favorite—little black-cap. The naturalists give this little bird a dreadful character, and say of him that he smashes in the skulls of

other little birds and eats their brains. I shall always consider it a vile slander, Audubon and all the rest of them to the contrary notwithstanding. These charming little birds are seldom seen except in the depths of the forests; at rare intervals, they come out to the clearings, but their homes are in the forest. In order to give an idea of the tameness of these birds, I may mention that at this moment, as I write, a cedar-bird is begging to be taken on my finger and held up to my face so that he may indulge in his pet occupation of preening my mustache, and a red-poll linnet is industriously strewing the floor with my pencils and paper, and if scolded flies away uttering his plaintive call, "Sweet-Willie!"



CEDAR-BIRDS.

At night, as we sat over the camp-fire smoking our pipes, we heard a horrid screech in the forest.

"Up-we-pe-se-kin [lynx] chasin' rabbits," said Tomah in sepulchral tones, between the whiffs of his pipe.

"You see," said Sebatis, in explanation of Tomah's remark, "when up-we-pe-se-kin make noise like that, scar' 'im rabbit so bad he jump right out sight in deep snow, then you see up-we-pe-se-kin dig him out an' have pretty good supper."

Just as I was turning out next morning, Sebatis walked into camp, and said:

"Sartin, caribou very hungry this mornin'; I find plenty places where he eat 'im off old men's beards, close up."

This is the long, trailing moss which hangs from the trees and bushes, and is a favorite food of the caribou.

"What kind of snow-shoeing to-day, Sebatis?"

"Just right; sun pack 'im down snow good deal; very good chance snow-shoein' now."

FOREST BIRDS.

Tomah had breakfast ready, and in a few moments moccasins and snow-shoes were the order of the day.

"Which way, Sebatis?"

"Try 'im big barren again."

"Sartin, best go little barren first," said Tomah; "s'pose we don't find 'im caribou, then try 'im big barren."

"May be Tomah right," said Sebatis; "little barren nearest,—only 'bout two miles,—an' very good ground to fin' caribou."

Just enough snow had fallen to make good snow-shoeing; in fact, we could have got on without snow-shoes but for the drifts and swampy parts of the barrens, over which the broad snow-shoes bore us safely. Fortunately for our comfort, the high wind that prevailed prevented the snow lodging in the spreading boughs of the coniferous trees, and we escaped the smothering often experienced from avalanches of snow immediately after a snow-storm. These avalanches are one of the most disagreeable things encountered in the forest in winter. Sometimes, as the hunter tries to force his way under the pendent boughs of a large fir-tree, the accumulated snow will be discharged upon his head, getting down his neck if his hood is not up, wetting the locks and barrels of his gun, and piling up on

his snow-shoes in such a manner as to hold him prisoner for the time; and often, in trying to work clear, he gets his snow-shoes tangled and takes a header into the snow, and his misery is complete. Moreover, the chances are ten to one that, while he is helplessly floundering in the snow, he hears the sharp crack of his companion's rifle, who has stolen a march on him and is up with the game; and then good-bye to any sport that day, for even if he could get his gun dry and serviceable again, his nerves are so unstrung that he could not hit the side of a house, much less the swift caribou.

On our way to the barren we saw several fresh tracks of caribou, but had not discovered their beds, as the Indians term the depressions in the snow made by the caribou when lying down to rest. After inspecting indications of that kind, the Indian can form a correct opinion of the time elapsed since the beds were occupied, and is guided thereby in his decision as to whether it is wise to follow up the tracks leading therefrom.

Silent as mutes, we tramped along in Indian file; but if the Indians did not use their tongues, their eyes were not idle, and the slightest caribou sign was instantly discovered and examined. We had nearly reached the barren without finding any fresh tracks, and I was getting a little impatient, and sorry that we had not gone to the big barren, as first suggested by Sebatis, as it was in that direction he saw the places where the caribou had cropped off the "old men's beards."

"Little barren handy now," said Sebatis, with his usual abruptness.

"Where is Tomah?" I inquired, having just discovered the absence of that worthy.

"Where's Tomah, sure enough?" echoed Sebatis. "I don't miss him myself only just now."

He had vanished like a "spirit of eld," and as where he had gone, or on what errand, was past finding out, we made our way quietly to the edge of the barren without him.

Long and earnestly Sebatis scanned the barren with his searching gaze, then ventured out a few paces, stopped suddenly, and beckoned me to him.

"Hist! don't make noise," he whispered. "Caribou somewhere on this barren; you see 'im track just 'longside big rock, then little

ways 'head you see 'im tracks go everywheres; must be nine, may be ten caribou go that way."

"Are they fresh tracks?"

"We look by-em-by; find out which way wind first. By t'unders, we got wrong end barren."

"What do you mean?"

"Wind blow straight down barren; s'pose we try hunt 'im caribou, sartin he smell us."

"Well, what had we better do?"

"Best hide 'im somewheres on barren."

"There 's a clump of firs nearly in the middle of the barren; I should think that a good place."

"We go try 'im. You see caribou movin' all time; may be by-em-by comin' back on his tracks, then very good chance."

The barren was about three miles long and over one mile wide, sprinkled with groups of fir-trees, and the usual supply of alders, bowlders, and old dead tree-trunks. Lurking about in our place of concealment was tedious in the extreme, and I was about to beguile the time with a smoke, but I remembered in time the terrible rating old Tomah got from Sebatis when smoking, for we were in ambush behind the big bowlder.

Just then we heard the boom of a gun.

"By t'unders, that old Tomah, sartin; so cunnin', you see, just like fox; he find out wind wrong way, then he go round on woods an' come out other end barren."

"Do you think he has turned the caribou back this way?"

"Sartin, that just reason he go round woods; so cunnin', you see, that old Tomah."

We now moved out of our shelter a little so as to command a better view of the barren.

"Do you see any caribou, Sebatis?"

"No, don't see nothin' 't all."

I was looking intently, and fancied that I saw the form of a caribou disappearing behind a bunch of alders. Sebatis saw him at the same moment, and several others that I failed to detect.

"By t'unders!" he whispered, "you see 'im, one, two, five caribou, just goin' behin' bushes up there; good chance now, s'pose don't make 'im noise."

A GOOD CHANCE.

The good chance was so long in coming that I was well-nigh in despair. Sebatis had crossed to another clump of bushes, and, being rid of him, I was just about to resort to my pipe, when I heard the peculiar and unmistakable castanet sound caused by the split hoof of the caribou striking together as he recovered in his stride, and looking out on the barren I saw five caribou, trotting full speed, almost abreast of me, and not over forty yards distant. They raised such clouds of snow that I could only see their heads and occasionally their shoulders, but as it was my only chance I fired at the second caribou in the herd, and unfortunately only wounded him. He tried to keep up with the herd, but they soon distanced him, and I was hurrying on in pursuit, when "bang!" goes Sebatis's gun from behind some bushes, and down goes my caribou.

"I wounded that caribou, Sebatis; there were four others ahead of him."

"Sartin that's too bad. I don't see 'im 't all, only this one. You see I been look other side bushes, and when I hear gun I run this way; then I see caribou kin' of limpin', you see, an' I think may be get away, so best shoot 'im more."

"Who kill 'im that caribou? Two guns fire, on'y one caribou dead," said a voice over my shoulder, in tones that could be none other than those of Tomah.

"Two bullets kill 'im that caribou sartin this time," said Sebatis, pointing to two bullet-holes in the body of the poor caribou.

"Where have you been, Tomah? We thought you were lost."

"No, not lost. When I fin' out wind wrong way, then I go in woods an' come out head barren; turn 'im caribou."

"Did you get a shot at them?"

"Sartin, I kill 'im caribou."

"How many did you see?"

"Bout t'irteen. Five come this way, rest gone away somewhere, may be big barren. Sartin plenty caribou big barren to-morrow."

"Why do you say to-morrow?"

"'Cause caribou all travelin' to-day. I see 'im tracks go everywhere, an' plenty sign bite 'im moss, besides."

We *cached* the caribou killed by Sebatis and I, then tramped to the head of the barren and performed a like office for the one killed by Tomah,—a two-year-old buck,—then to camp, as it was too late in the day to try the big barren.

"Now," said Sebatis, after dinner and the invariable pipes, "Tomah an' me go hunt 'im wood an' bark, make 'im tobaugan, then we haul 'im caribou camp. Keep 'im safe, you see."

During the night there was a fall of snow, which made the snow-shoeing heavy. However, we determined to try the big barren; and a weary day we had of it, tramping over the soft snow, which accumulated on the front of the snow-shoe and required quite an effort to throw it off. All traces of the old tracks were obliterated, and we did not see a fresh track that day, although we searched the greater part of the barren, being careful to disturb the snow as little as possible, as a show-shoe trail is almost certain to frighten off a herd of caribou.

After patient watching and manifold observations obtained by climbing trees, the Indians at length, in despair, gave up hunting and took to their pipes. Although as much disappointed as they were, I well knew that it would be futile to urge them on to hunt until they recovered their spirits. Like two graven images, they sat puffing away at their pipes, and to all appearance might have continued so doing until the crack of doom, but for an opportune crash, as of breaking branches, followed by a resounding fall that came from the forest, a little to the right of our position; and although

they were well aware of the cause of the noise,—a lodged tree suddenly released by the branches giving way and letting it fall to the ground,—it had the effect of waking them up and loosening their tongues.

"Sundown come pretty quick now; best go camp," said Sebatis.

"Best go camp," echoed Tomah.

And go to camp we did, in double-quick time, arriving just as darkness was closing in.

There were several changes of weather during the night, first a drizzling rain, then a sharp frost, followed by more snow.

"Better luck to-day," said Sebatis. "I dreamin' last night, see 'im plenty caribou."

"John very good han' dreamin'; I like see 'im fin' caribou first, then I 'lieve him," said Tomah.

"Why does Tomah call you John?" I asked Sebatis.

"Well, you see, I got t'ree—four—names, John Baptist Joseph, that's my name."

"Dreamin' so hard he forgot his name," said Tomah; "he got 'nother name 'sides, Saint John Baptist Joseph, that's his name."

"Sartin, that's true," said Sebatis; "now, I 'member, I tell you all 'bout it—used to be my name just same Tomah tell; well, you see, that pretty long name, then make 'im shorter, call 'im Saint Baptist; then make 'im shorter 'gain, call 'im Sebatis; s'pose, make 'im any shorter, by-em-by, name all gone."

"Then, your surname—I mean your family name—is Joseph?"

"Sartin, my father, all my brothers, got same name, Joseph."

"Now, Sebatis got fix 'im his name 'gain, s'pose he show us where find 'im caribou," said Tomah.

"Sartin, snow most over, we go big barren 'gain."

The snow was greatly in our favor, as just enough had fallen to enable us to walk noiselessly on the crust,

A very strange sensation is often experienced by the hunter as he walks unconcernedly on his way, after the formation of a crust; at first he hears a peculiar creaking sound, and fancies that the snow is moving under him, then the creaking becomes louder, and is accompanied by a muffled, rumbling noise, and suddenly the snow under and around him sinks, and he fears that he is about to fall into an abyss. The snow in reality seldom settles over one foot or

eighteen inches, and no matter how familiar one may be with it, every fresh experience excites the same apprehension.

I had just been let down in that way, when my attention was attracted by Sebatis, and he beckoned me to where he and Tomah were examining something.

"Eight caribou all sleep here last night," he said, pointing to a number of depressions in the snow.

"How long since they started, Sebatis?"

"Start only little while, you see tracks so fresh. Always good time hunt 'im when first started, 'cause bite 'im moss an' feedin', then he don't go fast 't all."

"Best take 'im off snow-shoes an' walk in caribou tracks," said Tomah.

"Sartin that best, then don't make no noise," said Sebatis.

This mode of traveling is anything but agreeable, but as the snow was not very deep, it was greatly preferable to what I have often experienced on other occasions, when one would sink half-way to the knees at every step, and woe betide him if he made a false step!

"Caribou stop here feedin' little while," said Sebatis, pointing to some newly cropped "old men's beard."

"Caribou go two ways," said Tomah, who was a little in advance.

The herd had separated, three caribou going toward the big barren and five off in another direction. As it promised a better chance for game, I imitated the tactics of the caribou, and divided our party, taking Sebatis with me on the track of the five, and sending Tomah off after the others.

Plodding along in the foot-holes of the caribou was very leg-tiring, but Sebatis kept on at a trot until brought to a stand by some very fresh sign.

"Caribou bite 'im moss here only 'bout t'ree minutes ago; must be handy somewhere; best put 'im on snow-shoes again, may be have run pretty quick by-em-by."

After putting on his snow-shoes, Sebatis struck out in a direction nearly parallel to the caribou trail, and we set off at a very much quicker gait.

We were just descending a slight declivity, when Sebatis waved his hand to me, exclaiming at the same time:

SEH-TA-GA-BO!

"Seh-ta-ga-bo!" (Keep back.)

At the word I dropped in my tracks and awaited further orders. Twice he raised his gun as if to fire, then lowered the muzzle and beckoned me to him.

"What is it all about? Do you see the caribou?" I whispered.

"Sartin, see 'im all five walkin' in woods just little ways 'head. You look same way I point, by-em-by you see 'im."

We had just entered a glade of fir-trees, and between the tree-trunks I caught a glimpse of what I supposed to be a lake, but did not discover any caribou.

"Hist! there goes caribou, there goes 'nother one—two—t'ree more; you see 'im? Quick, fire!"

Bang! goes my rifle at an indistinct form moving past the tree-trunks some thirty yards distant.

"You kill 'im, sartin," Sebatis whispered. "I see 'im give big jump, then he don't move 't all.

"Are the others gone?"

"No, scared pretty bad; stan' listenin' somewheres. By t'unders! —look, you see 'im caribou move on small bushes right on lake—fire!"

"Blaze away, Sebatis. I don't see them, and they will be off sure if you wait for me."

Bang! goes his smooth-bore with a roar that made me as deaf as an adder for the moment.

"Did you kill him?"

"May be so. Not sure, you see, so much smoke."

We hastened to the spot and found my caribou—a large buck —lying dead in his tracks. A little further on, Sebatis found a bloody trail leading down to the lake, and about one hundred yards from the shore we saw the other caribou—a fine doe—vainly struggling to regain her feet on our approach.

At the sight, I vowed that I would break my gun and never hunt again, until ——

"Here, Sebatis, take my rifle and finish your work quickly."

"How far is it to the camp?"

"Little mor'n four miles. I go get tobaugan, an' bring some dinner. S'pose you stop here?"

"Yes. Be as quick as you can."

"Sartin, I go pretty quick. You see snowin' again. By-em-by heavy storm, may be."

True to his promise, Sebatis returned inside of a couple of hours. With appetites born of the woods, we dispatched our lunch. Then to work to get our game to camp. The angry gusts of wind soughing through the lofty branches of the fir-trees, and driving the fast-falling snow into clouds of impalpable powder, warned us to hasten our packing.

"Ready, now, no time spare. By-em-by storm so heavy, hard chance find 'im camp," said Sebatis. He had fastened one end of a serviceable rope of withes to the tobaugan, passed part of it over his shoulder and gave me the other end to pass over mine, and away we tramped.

These sudden winter storms possess the magic power of investing the hunter with an indefinable terror. In a very short time all landmarks are obliterated and the air filled with a blinding powder. Now and then the snow settles under him with a crash, and he feels

as if there was nothing real or substantial around him. The bewildering, drifting powder is everywhere, and he is blinded and buffeted by it in such a manner as calls for the instant exertion of all his courage to carry him safely through.

"By t'unders! Never so glad get camp all my life. So tired, you see storm so heavy," said Sebatis, as we rested before the camp-fire after our fearful four-mile tramp from the lake.

The click of approaching snow-shoes announced the return of Tomah.

"Who kill 'im that cari——"

Just then he saw that there were two dead caribou, and, without another syllable, he shook the snow from his clothes and sat down by the fire.

A SHOT FROM TOMAH.

DEER-HUNTING ON THE AU SABLE.

By W. MACKAY LAFFIN.

AN invitation to a few weeks' deer-shooting in the wilds of Michigan was not to be foregone. There had been occasional rumors heard in the East of the winter sports of the Michigan backwoods; rumors that had lost none of their attractiveness by their journey from the West, and which served to make the opportunity, when it did arrive, wholly irresistible. I was to join a party of gentlemen, who for several years have hunted upon the Au Sable River in northern Michigan, upon one of their annual trips; and we were all to meet upon an appointed day at Bay City, which is at the head, if head it can be called, of Saginaw Bay. Our route thence was by steamer to Tawas, and from Tawas by teams to the hunting-grounds in the Michigan backwoods.

The steam-boat wharf at Bay City was full of bustle and activity. There were piles of baggage and numbers of anxious owners. Conspicuous among the parcels were the gun-cases, some made of new pig leather or water-proofing, and evidently out for the first time, and others of weatherworn aspect, telling of many a campaign and of much serious usage. Every object upon the wharf and about the freight office to which a dog could be tied had a dog tied to it, and all these dogs were rearing, and plunging, and tugging at their chains, and giving vent to occasional sharp yells, in a condition of great excitement — a feeling more or less shared by the numerous higher animals who were present. The crowd was composed of hunting parties bound for the backwoods by way of the various settlements on the Lake Huron side of the Michigan peninsula; of lumbermen going to the camps; of farmers going home, and of the usual

variety of more or less accentuated Western types. There was a good deal of confusion about it, and among it all our party met, and, after a few moments of spasmodic and pleasant welcome and the interchange of hearty greetings, we got on board the steamer. Our dogs, twelve in number, were safely bestowed between decks, and as remotely from the dogs of other people as possible; all our baggage was put away, nothing missing or forgotten, and we moved off from the wharf with that sense of entire comfort that is incident only to well-ordered and properly premeditated excursions.

We had a delightful run up Saginaw Bay on a beautiful October evening, on which the sun went down with one of those gorgeous displays of color which England's most eminent art critic has told us are seen but very seldom in a life-time. It was an impressive and singularly beautiful spectacle, but one of which our West is prodigal, and which is not consistent with insular conditions of fog and moisture. A note of admiration sounded within the captain's hearing had the effect of eliciting his practical valuation of it. "Humph!" he said, "rain like blazes all day to-morrow." It was a matter of common regret that the barometric impressions of this worthy navigator were invariably correct. We made some stoppages at points upon the shore, where seemingly unaccountable wharves projected from the outskirts of desolation. At these we took off people who might have been fugitives from some new Siberia, and debarked people who might have been exiles going thither. But at half-past eight o'clock we reached East Tawas, where, as the boat came alongside, we were cheerily hailed out of the darkness by a mighty hunter of the wilderness named Curtis, who had come down with his stout team to meet us and help to carry our multifarious traps. We disembarked amid a dreadful howling of the dogs, who charged about in every direction, dragging their masters, in the darkness, over all manner of calamitous obstructions, regardless of kicks, cuffs, or vigorous exhortations. In half an hour we were comfortably ensconced in an inn with an enormous landlord, whose mighty girth shook with unctuous premonitions of an excellent supper. He produced half of a deer slain that very day, and gave us an earnest of our coming sport in the shape of a vast quantity of broiled venison, all of which we dutifully ate.

Our captain—for we had a captain, as every well-constituted

UP SAGINAW BAY.

hunting-party should—was Mr. John Erwin, of Cleveland, a gentleman at whose door lies the death of a grievous quantity of game of all kinds, and whose seventy years seem to have imparted vigor and activity to a yet stalwart and symmetrical frame. Hale, hearty, capable of enduring all manner of fatigue, unerring with his rifle, full of the craft of the woods and an inexhaustible fund of kindly humor, he was the soul of our party. We were under his orders the next day, and so remained until our hunt was over. He was implicitly obeyed; none of his orders were unpleasant; they simply implied the necessary discipline of the party. We left Tawas in the early morning. We had two wagons, one of which carried nine of us; the other, Curtis's, had the heavier baggage in it, and was accompanied by the remaining three on foot. They had the option of getting into the wagon by turns, if tired; but they were all good walkers. We had twenty-five miles to make to "Thompson's," where we were to halt for the night, and on the following day proceed leisurely to Camp Erwin, six miles further. As we left Tawas it rained, according to our nautical prophet of the previous evening, and it continued to rain during the entire day. There is nothing particularly exhilarating in driving in a drenching rain, even when it is done under particularly

favorable auspices. There was some novelty for one, to be sure, in the great wastes of scrub-oak, the groups of stout Norway pines, the white birch, the maples, the spruce-pines, and the beeches, glistening in the impenetrable jungles of tangled undergrowth, and in the iteration and reiteration of landscapes with no landmark or peculiarity whereby one might distinguish one from the other. All this was in one sense a novelty, inasmuch as one might never have seen anything like it before; but the enjoyment of it, were it really susceptible of being enjoyed, was marred by the steadiness with which the cold rain beat in our faces; extinguishing cigars and making pipes a doubtful blessing; drenching everything exposed to it, and imparting that peculiar chill to which mind and body are alike liable under such conditions. One of our party, a veritable Mark Tapley, who was sure to "come out strong" under the most discouraging conditions, whistled fugitive airs in a resolute way; but they got damp and degenerated into funereal measures, suggesting that possibly the Dead March in "Saul" was originally conceived in a spirit of inferior vivacity or sprightly insincerity, and becoming wet had been recognized as a thing of merit, and had therefore been permanently saturated for use on occasions of public grief. Another dispiriting element was the road, of which a large part was what is known as "corduroy," from some obscure resemblance, which does not exist, between its structure and a certain well-known fabric affected by "horsey" gentlemen. The jolting we got over this was painful to a degree which it is disagreeable to recall. It jarred every bone in one's body, and embittered the whole aspect of life. It alternated with a series of diabolical mud-holes, into which we dived, and rocked, and swayed, and splashed interminably. Bunyan's Slough of Despond is all very well in its way, but the possibilities of figurative description of that kind are as a closed book to one who has never ridden on a corduroy road in a wagon with inferior springs. At last, we emerged on a higher plateau of sand, and left the marsh behind us for good. The rain had become a milder and tolerable evil, compared to the swamp road. All was sand, but the wet made it "pack" beneath the horses' feet and the wheels, and we went over it at an excellent pace. Around us was the Michigan forest in all its wonderful variety of growth and richness, and in all its drear monotony and desolation. Grass there was in tufts, and thin and poor. Thick gray lichens and

starving mosses strove to cover up the thankless sand, but nothing seemed to prosper in it but the trees, for which it held mysterious sustenance where their deep roots could reach it. But even they made an unlovely forest. The great fires that sweep across this region leave hideous scars behind them. One sees for miles and miles the sandy plain covered with the charred trunks of the fallen forest. Great lofty pines, whose stems are blackened from the root as high as the fire has reached,—huge, distorted, and disfigured,—stand gloomily above their moldering brethren, their white skeletons extending their dead and broken arms, in mute testimony of lost grace and beauty. Nothing could be more desolate than these "burnings," as they are called. They present an aspect of such utter, hopeless dreariness, and such complete and painful sclitude, as one might imagine to exist only within the frozen circle of the Arctic.

The rain continued and wet us until we began to get on good terms with it, as if we were Alaskans or Aleuts, and rather liked it. Besides, we got stirred up over the deer-tracks in the sand. They were very numerous and fresh, and one or two rifles were loaded in hopes of a shot at one "on the wing." None came in sight, however, and the undergrowth and scrub-oaks effectually kept them from our view.

At half-past one o'clock, after a few premonitory symptoms in the shape of fences, of which the purpose was obscure, since they hedged in nothing, and looked as if they had only been put up for fun or practice, we came suddenly to the edge of a basin or depression in the plateau over which we had been driving, and there, beneath us, lay Thompson's. Here in the midst of the wilderness was a prosperous, healthy-looking farm, actually yielding vegetables and cereals, and having about it all manner of horses, cows, pigs, hay-stacks, barns, dogs to bark, pumpkins, and all the other established characteristics of a well-regulated farm. We rattled down the declivity to the house and met with a hearty welcome, most of the party having known Thompson for years. He is a bluff, hearty backwoodsman, whom years of uninterrupted prosperity have made rich. He owns thousands of acres of timber-land, and his house is known far and wide as the best hotel in Michigan. Mrs. Thompson is not exactly a backwoodswoman; indeed, she is quite as much of a surprise to one as is the place itself. She is an excellent lady,

and her refining influence has been felt in a very marked degree in that wild region. She can shoot, though. Indeed, she handles a rifle with the greatest coolness and skill,—thinks nothing of knocking over a deer, and confesses to aspirations in the direction of bear. Mr. Thompson's welcome in the course of an hour took a practical form, when we all sat down to a magnificent roast of venison, broiled chickens, and the most delicious of vegetables; for it seems that when one does get a bit of Michigan land which will consent to be cultivated, it turns out to be remarkably good land indeed. There were great glass pitchers of excellent milk upon the table, similar pitchers of real cream, and everything was neatly served. The table-cloth was fine and of snowy whiteness, the napkins (this in the heart of a Michigan wilderness!) ditto, and everything just as it should be, and just as one would least have expected to find it.

Thompson's hands came in the evening,—Canadians, for the most part, and talking an inexplicable jargon called French. Reënforced by a few lumbermen and trappers, they filled the big, dimly lighted room which would ordinarily be called the bar-room, but which, having no bar, owing to Mrs. Thompson's way of inculcating temperance principles, cannot so be called. They were noisy, well-behaved, and good-humored, and they crowded around the stove, and bedewed it pleasantly and copiously with infusion of Virginia plug. There was a great deal of talk about lumber; how many feet such-and-such an one expected to "get out"; where such-and-such camps were about to be located; the prospect of sufficient snow to move the heavy lumber-sleighs, and a variety of topics that had more or less sawdust in their composition. They spoke with loud, individual self-assertion, and there was a curious touch of defiance in every sentence that involved a direct proposition. This quality of their speech, coupled with a degree of profanity which was simply startling in its originality, its redundancy, and its obscurity of purpose, made a stranger feel as if a fight might occur at any moment. But there is no danger of anything of the kind. They live in this atmosphere of exploitation and brag, with entire amicability and good nature, and only fight when the camps break up and the men are paid off. Then they congregate at the lake settlements and elsewhere, and get frightfully drunk for weeks, and shoot and stab with a liberality and self-abnegation that suggest that they ought

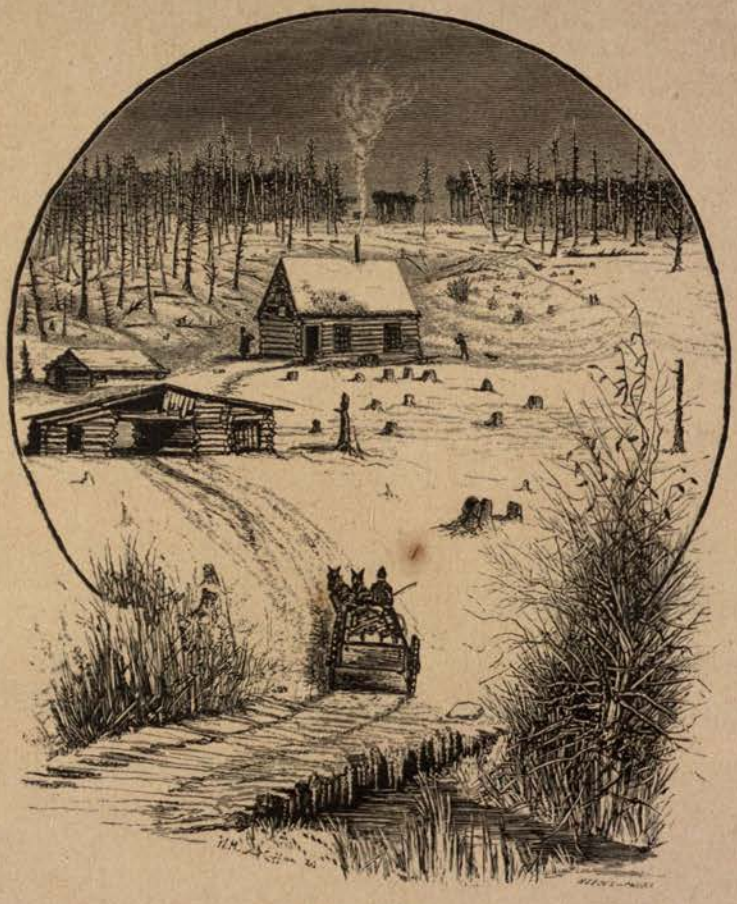
to have a literature built for them like that which a kind and artistic hand has so deftly erected for the favored miner of the Pacific slope.

A curious effect which this native windiness produces upon the stranger who comes to hunt is, that after a week of it he finds himself impelled to the conclusion that he has shot the only small deer

A LUMBER-SLED.

there are in the State. We could not meet a man in the country all about that had ever seen a small deer. The word fawn, from desuetude, will be dropped from their language. It was always "the blankest biggest buck! blank me!" or "the blank, blankest blank of a blank of a blank doe! running like blank and blankation for the blank river!" That was all we could ever get; and when perchance one of these identical, peculiarly qualified animals happened to be shot, the speaker stood wholly unabashed and unconscious in the presence of his refutation.

We left Thompson's hospitable place the next morning after an early breakfast. Curtis and his team carried all our traps, and after a tramp of two hours or so over the wet sand and through the desolate "burnings," we arrived at Camp Erwin. It is a deserted logging camp. The building on the left, in the little sketch I have made, is



CAMP ERWIN.

a rickety old barn; that behind it is a blacksmith's shop, and the remaining house is that in which we had our quarters. It contains, on the upper floor, one large and finely ventilated apartment; and below, the kitchen, dining, and "living" room and two small bedrooms. One of these was occupied by Mr. and Mrs. William Bamfield, the latter of whom had engaged to cook for our party, while the former, a stalwart and extraordinarily powerful backwoodsman, chopper, and blacksmith, "assisted," and made himself indispensable by his general handiness and utility, his readiness to do anything and everything, his good humor, and his entire novelty. Recurring to my sketch again: the stream in the foreground flows a mile away into the Au Sable (pronounced up here Sawble, the Au, too, being generally dropped), and around the house, as far as one may see, is

the everlasting "burning." In summer, all is dry, yellow sand; in winter, a mantle of snow sometimes covers it charitably and conceals some of the blackness and deformity of the dead pines.

ON THE AU SABLE.

The first day in camp was devoted to unpacking our traps and provisions, filling our ticks with straw, disposing handily of our various knickknacks, overhauling the rifles, and wasting ammunition under excuse of getting one's hand in. My share being accomplished at noon, some of us started down to take a look at the Au Sable River. After a walk of fifteen minutes or so, we came out of the forest abruptly on the edge of a high sand-bluff, and there it lay about one hundred and fifty feet below us. It came around a short bend above; it swept around another in front of us, and below us it wound around a third. Its waters were the color of dark-brown sherry, and its current was silent, swift, and powerful. Beyond, the bank was low, and the forest stretched back over successions of slightly rising plateaus to the horizon. Here and there one could see the scars of the fires, and a sinuous track of the darkest foliage

revealed the tortuous course of the Au Sable. This description would seem to apply well enough to the sketch I have made, but it was taken from a higher bluff some few miles further down the river. From any similar elevation upon its banks the scene would be the same. Save that the river gains in volume as it travels, its scenery throughout almost its entire length does not vary. It is a succession of interminable twists and turns past high or low bluffs of sand, long reaches of "cedar-swamp," and "sweepers" innumerable. This singular river is one that knows neither droughts nor freshets, which is always cold, but never freezes, and which will always preserve its wildness and its desolation, since, in the future, the wilderness through which it flows will be even wilder and more desolate than it is now.

The first evening in camp, around the council lamp, was spent in discussing the prospects of the morrow, in shooting over again all the deer that had been shot upon previous occasions, in comparing the target shooting of the day, and in the assignment by the captain of each man to his position on the river. Curtis and two of our party were to "put out the dogs," and the rest were to be stationed at the different run-ways. This explains the method of hunting. The river for a certain number of miles was divided into run-ways or points, at which deer, when hard pressed by the dogs, would probably take to the water and afford a chance for a shot. The dogs, twelve in number, were divided among those who were to have charge of them for the day, and they took them in various directions into the forest. When a fresh and promising track was discovered, a dog was let loose upon it, or perhaps two dogs, and the deer, after a run of greater or less duration, took to the river in order to elude pursuit. If it went in at a guarded run-way, it stood an excellent chance of being shot; but, of course, a large majority of deer driven in entered the river above or below, or crossed it shortly after reaching it.

A tick filled with straw and laid upon the floor makes an excellent bed, and sportsmen's consciences are always good, for they sleep with exceeding soundness. The ventilation of the apartment was generous in the extreme. The roof was tight, but all around were the open chinks between the logs, and through these the stars could be seen by anybody that had nothing better to do than look at them. Up through the middle of the floor and out through a big hole at the ridge-pole went the stove-pipe, always hot enough to worry an

insurance man, and an excellent spot to hang wet clothes. Elsewhere it was as cold as charity, and I supplemented my blankets with my heavy frieze ulster, and went to sleep to dream of giant bucks and a rifle that wouldn't go off.

The Michigan forests abound in a variety of game, but the animals that are valued for their fur have been thinned out by trappers, who, in turn, have disappeared to newer hunting-fields. One still finds the beaver, marten, fisher, lynx, and others. Bears are quite numerous, and there are plenty of wolves. Rabbits and Arctic hares and ruffed grouse exist in great numbers. The elk has almost wholly disappeared from the peninsula, but I heard that some were occasionally found in the extreme northern portion, and I saw a magnificent pair of antlers, having a spread of nearly six feet, which a half-breed had found imbedded in the trunk of a cedar-tree. The skin of the head and the greater portion of the skull were attached, the remainder having been torn away and scattered by wolves. The deer of the region is the *Cervus Virginianus*, or common deer of America, which is distributed over such a large area of our continent. It probably attains its greatest weight in Michigan. I learned, from credible sources, of bucks which weighed over two hundred and fifty pounds. Judge John Dean Caton, in his admirable work on the deer and antelope of America, speaks of having killed a buck in Wisconsin that was estimated to weigh two hundred and fifty pounds, and adds that the largest common deer of which he had any authentic account was killed in Michigan and weighed, undressed, two hundred and forty-six pounds. Of the deer killed by our party, there were no less than three that weighed over two hundred and twenty-five pounds. It is the most beautiful of the *cervidæ*, and in its graceful carriage, its exquisite agility, and the delicacy and symmetry of its form, no other animal approaches it. It varies somewhat, of course; but the buck, with the shorter legs, the rounded and compact body, the tapering nose and the well-erected, open antlers is the proudest and handsomest animal of the forest. The eye of the deer is large and has the softest and most tender of expressions. The marked convexity of the ball, the deep, calm, and gentle radiance of the iris, and the length of the shadow-line from the larmier to the posterior angle of the lids make up the more obvious anatomy of this amiability. In the rutting season, which occurs

during the earlier part of the winter, the bucks discard their gentleness in a great measure and fight in the fiercest way. It is doubtful if they ever kill or seriously injure each other, formidable as their antlers are when they have sharpened and polished them by persistent rubbing against the bark of young trees. They charge at each other, head down, and meet with a crash, and then stand or walk round and round in a circle, with interlocked antlers, swaying to and fro, and moodily watching each other's every movement. They continue at this sort of thing for hours, and superior prowess is more a matter of endurance and pertinacity than anything else. It would seem that the buck that holds out the longer completely wears out and exhausts his antagonist, who then withdraws and leaves him victor,—whereby the stronger and more favored males carry off the females and beget offspring possessed, by heredity and otherwise, of the same characteristics. The argument finds a strong illustration in the case of the deer, and backwoodsmen say that the younger and weaker males go unmated and are constantly being pursued and driven about by the stronger and older bucks. Some of these combats between the bucks result in mutual disaster when the antlers interlock and they are unable to withdraw from each other. They probably could if they made the effort at once, but they butt and push at each other, and each so studiously avoids giving the other an opening, that both are too exhausted to make the effort at separation, and there they remain until the wolves arrive on the scene and close the drama. Our backwoodsman had recently found two bleached skulls with antlers fast in each other's embrace, mutely telling a dark tale of love, jealousy, and a wedding unavoidably postponed. The fawns, betraying by their spots a former characteristic of their species, are timid, pretty little things. They do not seem to have the instinct which leads the adult animal to the water when pursued, and consequently when a dog gets on the scent of a fawn, he will hunt it bootlessly for hours, to the great annoyance of his master. A young fawn, just born, knows no fear of man. If picked up, fondled a few minutes, and carried a little distance, it will, when put down, follow a man just as it would its mother.

A tremendous uproar awoke me at the moment when for the hundredth time my rifle had exasperated me. It was Mr. B., shouting, "Breakfast! breakfast! Turn out for breakfast! The captain's

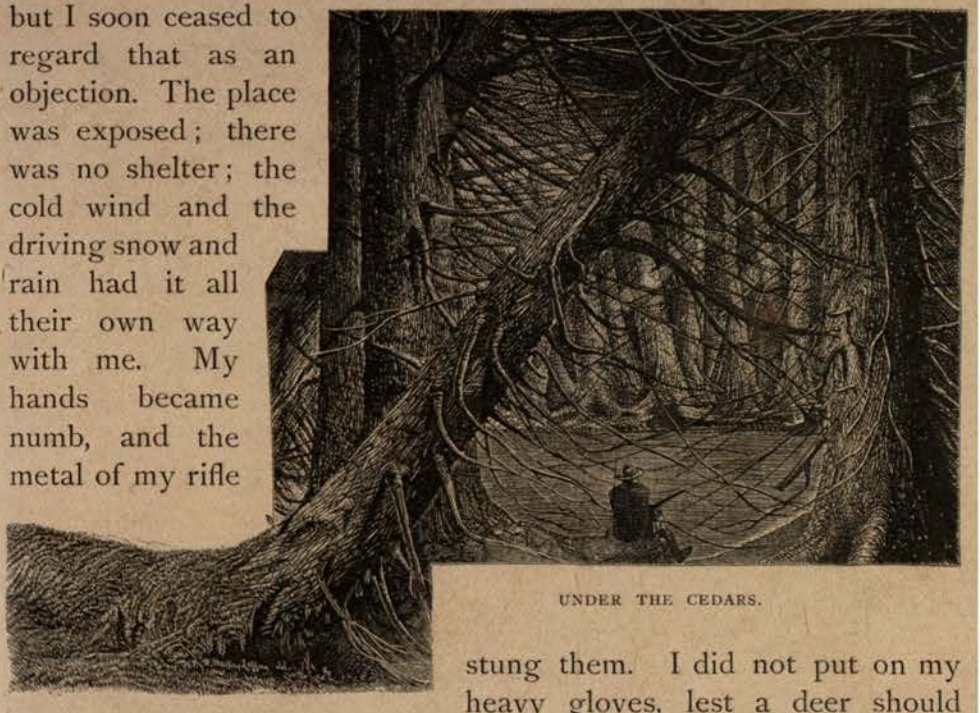
up and waiting!" It was half-past four, and everybody woke up at the summons, as was indeed unavoidable. There was a scratching of matches and a discordant chorus of those sounds which people make when they are forcibly awakened and made to get up in the cold, unusual morning. Down-stairs there was a prodigious sizzling and sputtering going on, and the light through the chinks in the floor betrayed Mrs. Bamfield and her frying-pans and coffee-pot, all in full blast. Somebody projected his head through an immature window into the outer air and brought it in again to remark that it rained. A second observation made it rain and snow, and rain and snow it was,—a light, steady fall of both. We were all down-stairs in a few minutes and outside, making a rudimentary toilet with ice-water and a bar of soap. Breakfast was ready,—plenty of rashers of bacon, fried and boiled potatoes, fried onions, bread and butter, and coffee, hot and strong. These were speedily disposed of. Coats were buttoned up, rubber blankets and ammunition belts slung over shoulders, cartridge magazines filled, hatchets stuck into belts, rifles shouldered, and out we sallied into the darkness, through which the faintest glimmer of gray was just showing in the east. Half an hour or so later, by the time we had gotten to our run-ways, the dogs would be put out. Off we trudged over the wet, packed sand of the tote-road, the gray dawn breaking dismally through the wilderness. Leaving the road, we struck into the pines, and a walk of a mile through the thick sweet-fern, which drenched one to the waist, brought us to the edge of the cedar swamp by the river. The narrow belt of low bottom-land on each side of the river is called Cedar Swamp. It is a jungle through which it is extremely difficult to progress, and in which one may very readily lose one's bearings. Great cedars grow in it up to the water's edge, and as thickly as they can well stand. Among them lie fallen trees in every stage of decay, heaped one upon another in inextricable and hopeless ruin and confusion. There are leaning cedars that have partly toppled over and rested against their stouter fellows, and there are cedars that seem to have fallen and only partly risen again. Their trunks run for several feet along the ground and then stretch up toward the light, in a vain effort to become erect once more. These trunks and all the fallen giants are covered with a thick carpet of the softest moss; everything, in fact, is covered with it, and here and there it opens,

and down in the rich mold is a glimpse of a bright little wine-colored, trickling stream stealing in and out among the cedar roots and losing itself in miniature tunnels and caverns on its way to the river outside. One's footfall is noiseless, except when a branch beneath the moss breaks, and the sunlight struggles but feebly down

through the trunks and dense foliage above. Sometimes the walking is treacherous, and the giant forms that lie about are hollow mockeries and deceptions beneath their pretty wrapping of green. Standing upon one of these, and doubtful whether to attempt a leap or more circumspectly climb to my next vantage-point, I executed a sudden disappearance, much after the fashion of a harlequin in a pantomime. A hole opened beneath my feet, and I shot through that hollow shell into the swamp beneath, leaving my broad-brimmed hat to cover the aperture by which I made my exit.

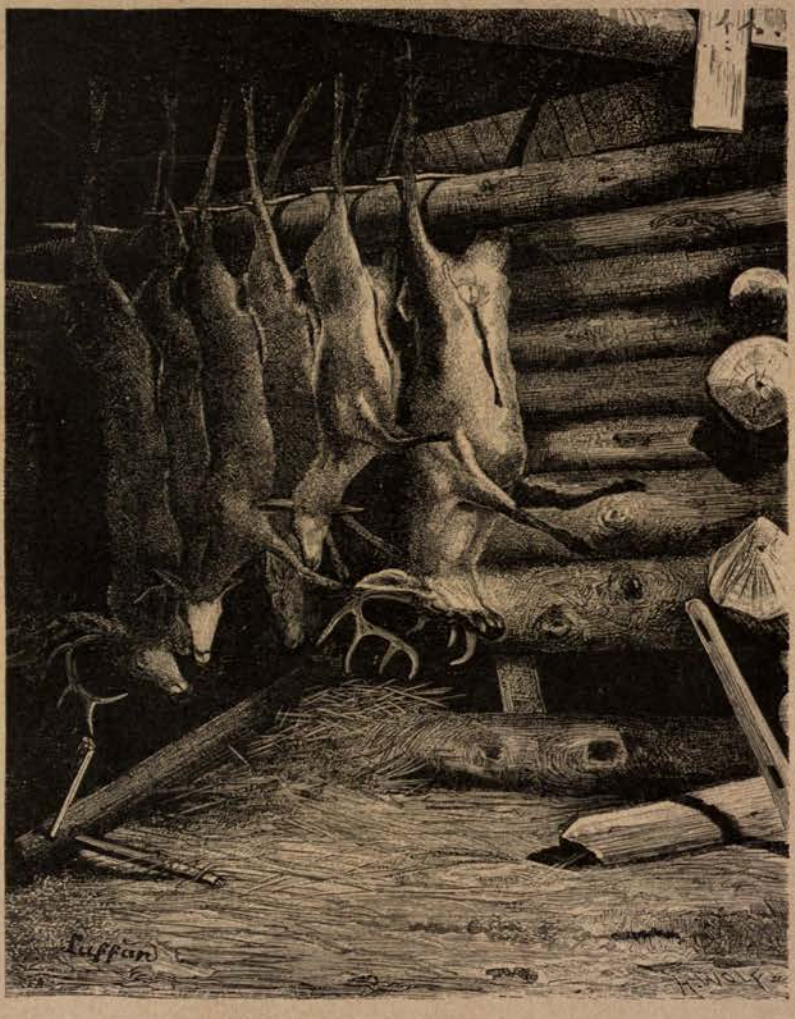
After a couple of hundred yards of climb, crawl, and tumble through one of these swamps, my companion took his place under the shelter of the cedars, and indicated mine at a little distance up the river. It was one of the best of our run-ways,—a long stretch of open bank, where the cedar swamp did not reach the river's edge. I got there, took my stand, and indulged in expectation. The exertion of getting through the swamp had warmed me uncomfortably,

but I soon ceased to regard that as an objection. The place was exposed; there was no shelter; the cold wind and the driving snow and rain had it all their own way with me. My hands became numb, and the metal of my rifle



UNDER THE CEDARS.

stung them. I did not put on my heavy gloves, lest a deer should come and they should prove an awkward impediment. I stood my rifle against a tree, stuck them in my pockets, and watched the river, while my teeth chattered like miniature castanets. The wind howled down through the trees, and clouds of yellow and russet leaves came sailing into the river and hurried away upon its surface. I was undeniably, miserably cold. But hark! I seized my rifle. Yes, there it was, sure enough, the bay of a dog in the distance! I forgot to be cold. Nearer it came, and nearer and nearer, and each moment I thought would bring the deer crashing through the thickets into the river. Nearer and nearer the dogs came, until their deep bays resounded and echoed through the forest as if they were in a great hall. But no deer appeared, and the dogs held their course, on, down, parallel with the river. "Better luck next time," I said to myself, somewhat disconsolately; but I was disappointed. Presently the sharp, ringing crack of a rifle rang out and reverberated across the forest; another and another followed; and as I began to get cold again, I tried to console myself by meditating on the luck of other people. I stamped my feet; I did the London cabman's exercise with my hands and arms; I drew beads



HUNG UP.

on all manner of objects; but steadfastly I watched the river, and steadfastly I listened for the dogs. The snow and rain abated, and the hours went by; and stiff and chilled was I when, at half-past twelve, young Curtis's canoe came poling up the river to pick up deer if any had been shot above, and had lodged in the drift-wood, instead of floating down to his watching-place, three miles below. The dogs were all in, he said, and the doctor had shot a big buck and a fawn.

At camp, the doctor was the center of an animated circle. He was most unreasonably composed, as I thought, and told us, with

his German equanimity, how Jack and Pedro had run in a large buck, which immediately swam down the middle of the river. He fired from his place on the side of a bluff and missed. At the second shot, he succeeded in hitting the deer in the neck just below the mastoid something or other. As if this were not sufficient, there presently appeared and crossed the river a very pretty fawn, whose young hopes were promptly blighted. They said it was not always that the first day yielded even one deer, and it was an excellent augury. During the afternoon, Curtis brought both deer up to camp and dressed them. The buck was finely antlered and was estimated to weigh over two hundred pounds.

The next day I was appointed to the same run-way, and I took my stand, and, acting on the advice of the others, built a brave little fire. Deer being driven into the river or swimming down it pay no attention to a small fire, and the making of it and the keeping it alive furnish excellent occupation. Indeed, there is something quite fascinating about building a fire in the woods, and it is quite inexplicable what a deep concern all the little details of its combustion create in even really thoughtful minds. My fire burned cheerily and blew lots of sharp smoke into my eyes, with the aid of the fitful wind; but I was not called upon to shoot any deer. I did not even hear the dogs, and at two o'clock I went home to camp, persuaded that I had not yet learned to appreciate our style of hunting. Our captain had a handsome young buck and was in a wholly comfortable frame of mind.

We had a larded saddle of venison during the afternoon for dinner. It was flanked by a dish of steaming bacon and cabbage and quantities of mealy potatoes and fried onions. The fragrance that filled the air of the cabin surpassed the most delicate of vapors that ever escaped from one of Delmonico's covers, and we fell upon the table with appetites like that of the gifted ostrich. The air of the Sable would be worth any amount of money in New York.

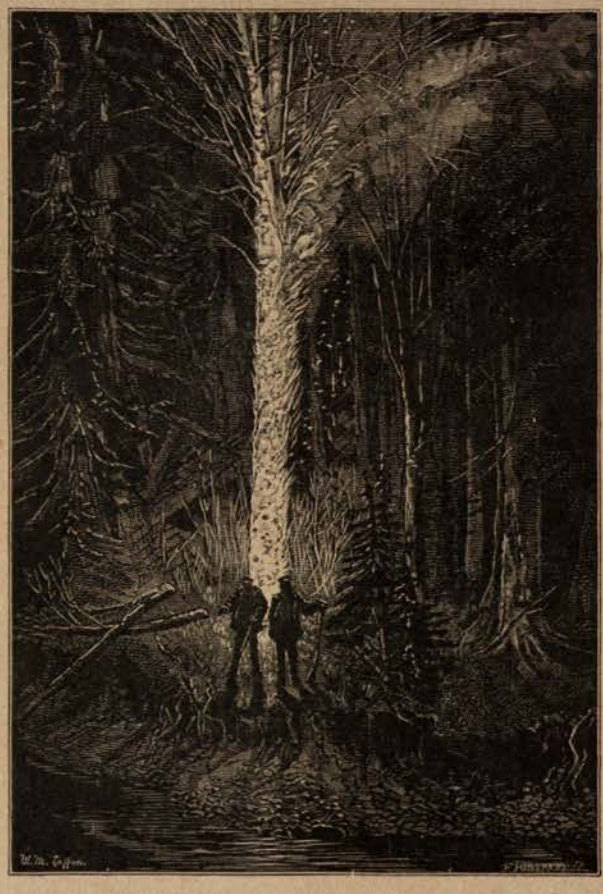
The next day I passed in a meditative fashion on my run-way. I was not disturbed by any deer, but Mr. M. and Mr. B. each scored one. The next evening, one of the dogs, foot-sore and worn out, remained in the woods. His master and one other sallied out into the inky darkness to look for him at points near which they deemed it probable he would have lain down. They took a lantern, without

A GENERAL SURPRISE.

which it would have been impossible to walk, and after a fruitless search, extending to a distance of three miles or so, turned back. Suddenly they heard light footfalls in the tote-road, and with two or three beautiful bounds a young doe alighted within the circle illuminated by the lantern, approached it in wide-eyed wonder, and almost touched it with her nose. A young spike-horn buck followed her, and both stared at the light, their nostrils dilated and quivering, and every limb trembling with mingled excitement and fear. There was an exclamation that could not be suppressed, a vain effort to shoot, and the deer were gone like a flash into the darkness. It was

curious to hear both gentlemen, on returning to camp, protesting that to have shot deer under such circumstances would have been wholly unsportsmanlike.

It was upon my sixth day, when a dozen deer were hanging in the barn, and I, quite guiltless of the death of even one of them, had gone to the river. The hours passed tediously up to noon, when I heard a splash, and saw a deer take the water three hundred yards or so above me. She was a large doe and came down the middle of the river, swimming rapidly and looking anxiously from side to side. I felt unutterable things, and just as she got abreast of me I brought up my Winchester and fired. She sank, coming up again some little distance down, and floated quietly away out of my sight around the bend. This performance produced a sense of pleasant inflation. All my fears were dispelled, and I felt a keen desire for the presence of others to whom to impart the agreeable fact. It was one of those things about which one always feels as if he could not, unaided, sufficiently gloat upon it. At half-past twelve, the canoe came around the bend, and I prepared to be indifferent, as should become a person who could shoot deer every day if only he were so minded. Strange, I thought, that the legs do not project over the side of the canoe, and how is it that —— At this moment the canoe gave a lurch, and I saw young Curtis's coat with painful distinctness lying in the bottom of it,—nothing else. I immediately inferred that he had missed the deer among some drift-logs as he came up. He protested he had not, but agreed to go back and search. I went with him, and just a few yards around the bend we found in the oozy bank tracks which indicated that the animal had fallen to its knees in leaving the water, and up the bank to the top a trail marked with blood. The remarks of Mr. Curtis, though fluent and vigorous, were inadequate to the occasion. I was in a condition of unbounded exasperation. For a little distance through the grass and the bushes the marks could be seen plainly enough, but there they disappeared, and that was the last I saw of my deer. The captain put two dogs out on the trail that afternoon, but the wounded animal had probably died in some dense thicket, for they soon returned without having run any great distance. Four fine deer were killed the next day, without any participation upon my part, and in the evening some of us, with lanterns, went down to the river to



A TORCH OF THE AU SABLE.

secure one that had lodged somewhere in the drift-wood. We found it, by the light of the birch-bark. As we made our way along the bank, our backwoodsman would pick out here and there a large white birch, and apply a match to the curling ringlets of bark at the foot of its trunk. In a minute the whole stem of the tree was in a roaring blaze, that lit up the river-bank all round about and made the great cedars look like gigantic skeletons. Each birch was a brilliant spectacle, while it burned in a crackling, sparkling column of flame, sending showers of sparks through the forest, and then dying out in an angry red and a cloud of murky smoke. Our deer was found, dressed, and hung up on a dead cedar, out of the reach of predatory animals; and we went home to camp by the light of our lanterns.

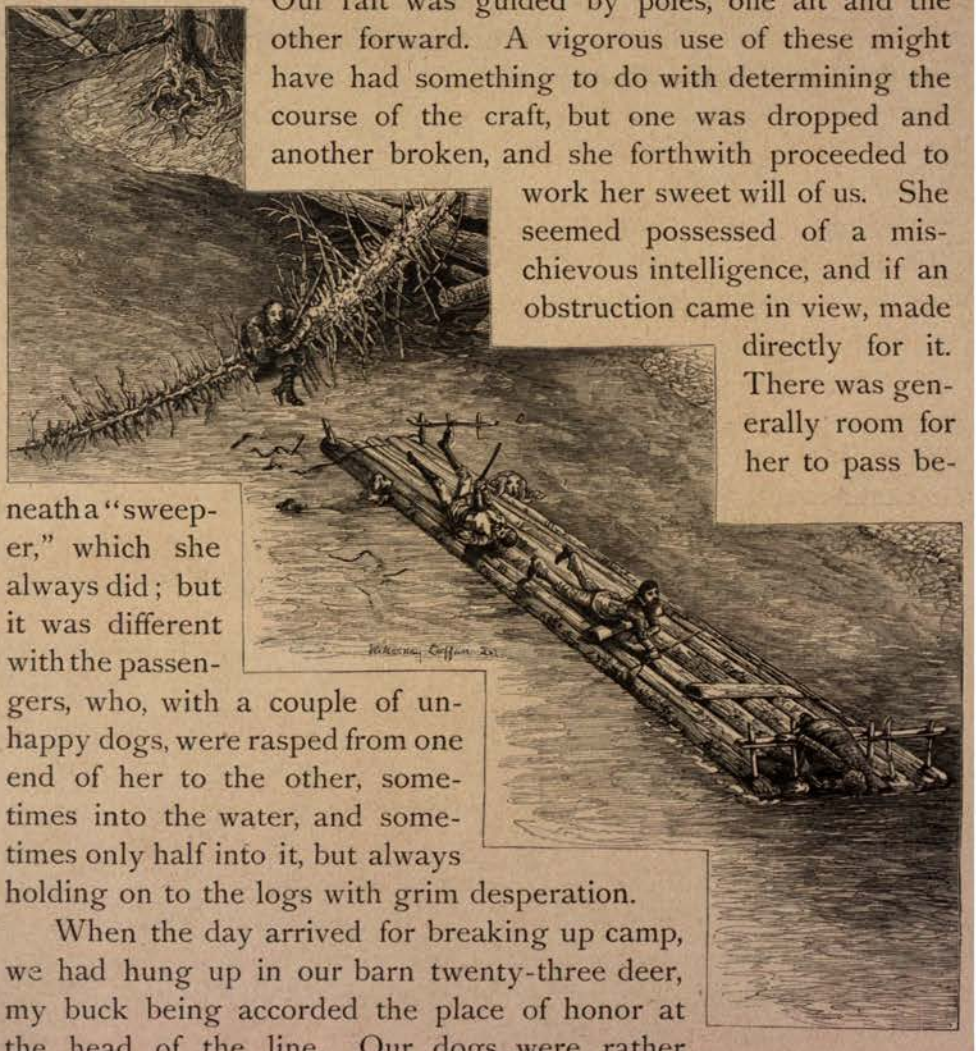
Next morning I was at my place, still unsubdued and hopeful. I heard a shot fired on the river below me; I heard the baying of the dogs, and listened to it as it died away in the direction of some other run-way. But I watched steadily; and as I watched, I saw the brush about some cedar roots open, and out there sprang into the shallow water a noble buck. He was a stalwart, thick-set fellow; his legs were short and compact, his fur was dark in its winter hue, and his antlers glistened above his head. He bore himself proudly as he stood in the water and turned to listen for the bay of the dogs he had outrun. I hesitated a moment, doubtful if I should let him get into the stream and swim down, or shoot at him as he stood. I chose the latter, aimed quietly and confidently, and fired. He pitched forward, the current seized him, and he floated down with it and past me, dead. In eight minutes, by my watch, Mr. M——'s Jack came to the bank, at the spot where the buck had come in, and howled grievously over the lost scent. He was worn out and battered, and he came to me gladly when I called him. I had brought some luncheon down with me that morning, and I must confess that I was weak enough to give Jack every bit of it.

That afternoon, when I reached camp, I found that I was the last to come in, and that my buck had already been seen and his size noted. I was received with acclamations, and a proposition to gird me, as a measure of affected precaution, with the hoops of a flour-barrel was made and partly carried into execution. There were sung, moreover, sundry snatches of the forester's chorus from "As You Like It":

"What shall he have that killed the deer?"

Of the Au Sable as a navigable river, I am pained to state that I cannot speak in a way calculated to allure people thither for the purpose of sailing upon it. Three of us were induced by our backwoodsman to embark upon a raft and make a run of fifteen miles to Thompson's. We did so, and failed to acquire upon the journey any marked prejudice in favor of that particular form of navigation. Cedars growing at the water's edge have their roots more or less undermined, and some of them fall gradually outward over the river, their branches hanging in the current and becoming denuded of their foliage, or dying. The trunk or stem of the tree is in some cases parallel

with the water's surface, and in others it dips below it or inclines gradually upward from it. These trees have been named, with a nice sense of the fitness of terms, "sweepers." We found them such.

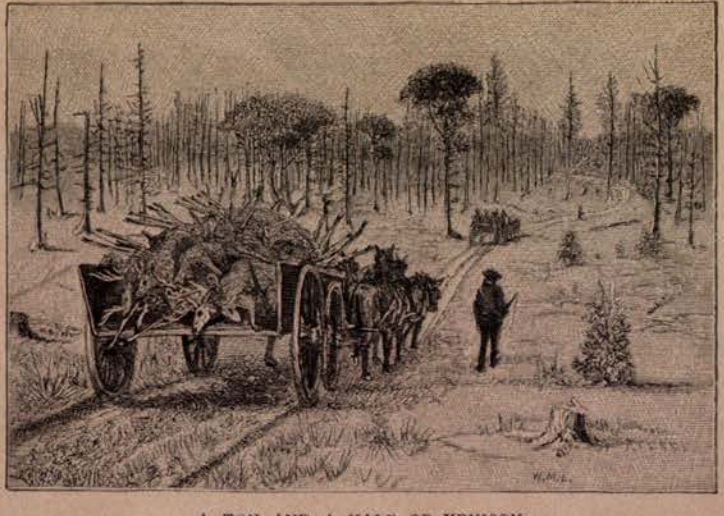


Our raft was guided by poles, one aft and the other forward. A vigorous use of these might have had something to do with determining the course of the craft, but one was dropped and another broken, and she forthwith proceeded to work her sweet will of us. She seemed possessed of a mischievous intelligence, and if an obstruction came in view, made directly for it. There was generally room for her to pass beneath a "sweeper," which she always did; but it was different with the passengers, who, with a couple of unhappy dogs, were rasped from one end of her to the other, sometimes into the water, and sometimes only half into it, but always holding on to the logs with grim desperation.

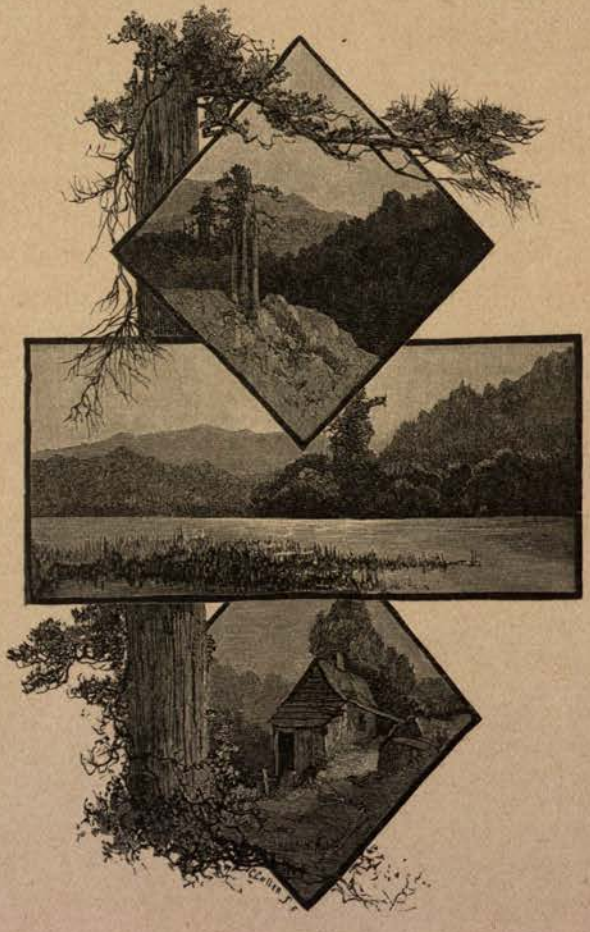
When the day arrived for breaking up camp, we had hung up in our barn twenty-three deer, my buck being accorded the place of honor at the head of the line. Our dogs were rather the worse for wear, but all were there, which is something unusual at the end of a hunt in this part of the country. The fact is, the natives discourage hunting with dogs, if not, indeed, all hunting in which they themselves do not participate. They place meat which contains strychnine on the deer-paths, and also, when occasion offers, shoot the dogs. A party of gentlemen from Bay City came into our neighborhood a few days later than we

did. They contemplated a three weeks' hunt, but during the first three days had two dogs shot and three poisoned. Some years ago, a party of Ohio people lost their dogs in the same way, and, unluckily for the active toxicologist, they found out who he was. When I passed that way he had rebuilt his barns and various outbuildings, and it was thought that, until the region commanded the services of a reliable insurance company, he would abstain from the use of strychnine. The immunity our party enjoyed had been gained somewhat as an ancient proprietary right, they having hunted there for so many years. Besides, they had in various ways rendered themselves popular with the natives; no visitor ever left the camp hungry or thirsty; and the Herr Doctor's periodicity was a matter of importance to a widely spread, if not numerous, community. They saved up fractures of six months' standing for him, and events of a more strictly domestic nature seemed to happen adventitiously during his hunting sojourn.

We brought out our venison safely and in good condition, — a ton and a half of it or thereabouts. At Detroit, we went our ways, ending an expedition which had in it, luckily, no mishap to mar it, but plenty of wholesome recreation to make one's recollection of it wholly pleasant.



A TON AND A HALF OF VENISON.



HUNTING THE MULE-DEER IN COLORADO.

SAYS a well-known sportsman,* in a work recently issued for the use of the fraternity, "Good hunting is at present scarcely to be found east of the Missouri River. West of that stream, however, there is a wide extent of territory in many parts of which game may still be found in considerable abundance by those who are sufficiently acquainted with the country to know where to look for it. * * * As things stand at present, the country where game most abounds is that which is now, or lately has been, infested by the Indians. * * * The Indians are the only real game preservers in the West."

That portion of the new State of Colorado lying west of the main range and north of the San Juan mining region is perhaps one of the very best of these localities; certainly the most accessible and practicable at a moderate expenditure of money and time. Here in four days, by rail from New York City, one may mount a well-trained animal and plunge at once into the primeval wilds. Here are the gate-ways of the great parks, in and surrounding which are thousands of square miles suited by nature to the purpose of a stronghold from which the game can never be wholly driven. Just within its farther limit is the Ute reservation, and its bulk is almost debatable ground,—the Indians hunting here, and loath to yield to the whites entire possession of their richest grounds and their great medicine waters, the Hot Springs of Middle Park. Legislation has been pending for a few years past, which will probably limit these

* Charles Hallock, of "Forest and Stream," in "The Sportsman's Gazeteer," pages 71 and 74.

friendly savages to a more remote point, and then the most timid of pilgrims may revel in the plenty of a region where I have seen five thousand elk in view at once,—the number estimated by men of life-long experience as herders,—and where I have known one man to kill forty bulls at a single stand. May a merciful Providence impel our legislators to invent some means of controlling the waste of this wealth! But, as I have said, total extermination is impossible. This is demonstrated in the case of the animal I am about to describe, which persists in using even those foot-hill regions of Boulder County, where mining, milling, grazing, and agriculture make together one of the thriftiest localities of the new West. Year after year he continues to startle the plowman or the herders by his sudden appearance, and a fortunate pistol-shot sometimes secures him for the larder; but of hunting, properly, there is little done now in the regions of the great tellurium discoveries, that have converted into swarming camps the hills over which, during my novitiate, I ranged with Hank Green, the Tourtillots, "Big" Osborne, and old Levi Van Rensselaer. If any of the Boulder boys wish to enjoy a good old-fashioned hunt to-day they go up to St. Vrains, Big Thompson, or the Cache La Poudre, or over the range into North or Middle Park. From this region west and south is the heart of the hunting, particularly in that portion reached by the Gunnison and its tributaries. Here roam all the varieties of game animals known to this latitude in America, with, I believe, one exception: the red, or Virginia, deer has never been found west of the range, except as a mongrel. If desirable, the element of danger may be sought in pursuit of the range and cinnamon,—the first a cousin of the true *Ursus horribilis*, somewhat stunted by change of habitat, but none the less ugly,—or the less ferocious brown and black bears, or the puma (of whom beware!), or the other cats and lynxes, or the sluggish but courageous wolverine.

The mule-deer does not bear an undisputed name. I knew him at first as the black-tail, as he is almost universally called here. A recent issue of the "Rocky Mountain News" contains an indignant protest from one of our hunters against the liberty "eastern" naturalists have taken in rechristening, as he supposes, this animal. The fact is, however, that whether the difference claimed between this variety and that of the Pacific coast* really exists or not, the

* *Cariacus Columbianus*, or black-tail deer.

HEAD OF THE MULE-DEER.

name mule-deer was recorded by Captains Lewis and Clark in their reports of the expeditions of 1804 and 1806, in which this animal, with the black-tail and Virginia deer, are fully described, with their mixtures and variations and respective limits of habitat. Probably the two, with the *burro** deer of Arizona, may prove to be merely variations of the same animal, as new admixtures indicating the blood of *C. virginianus* are sometimes found of late, and I have myself noted, among some hundreds of deer killed within a radius of a hundred miles from Denver, marked variations from any of the descriptions given by naturalists. The prominent marks of this variety are those which give the name,—immensely developed ears, a thin, switchy, and brush-tipped tail, a gray and black color, and a general air of sagacity and knowingness not belied by his behavior in the field. Here is his inventory: A pair of immense antlers, main beams well back, prongs straight up. Full length of beam in a well-grown pair measured by myself, fifty-five inches from extreme point to its opposite. Aggregate of growth in this instance, beams and prongs, nine feet and three inches. Sixteen well-developed points not unusual, though ten seems the normal limit, the excess of this number being usually irregular in position and ill balanced. Ears, eight to nine inches in length, in almost constant motion. Large, prominent, and beautiful eyes. Height, five and a half to six feet to antlers' tips; about four at the haunches. Body round and plump, legs slender and graceful, and small feet, seeming utterly inadequate to propel the two to three hundred pounds weight in such wonderful leaps over formidable obstructions, through regions of

* *Burro*, Spanish name for the ass kind.

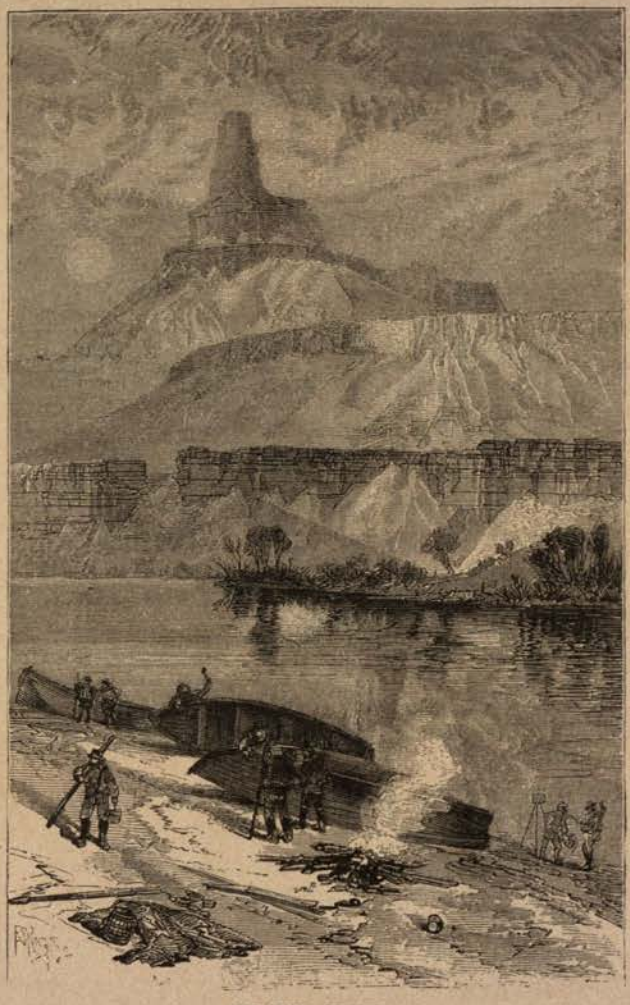
fallen timber and rock, almost impassable to man. His coat is a rich, warm gray or drab, shot with black shadows in the dorsal region, where the hairs are heavy and erect, and each has a tip of yellow and dead black. A gray to white space, from a downward angle between the eyes, extends to the nose, from under the eyes to the ears, and softening away at the sides of the neck, stops at an exact line a hand's breadth beneath the jaw. The chin, with some irregular touches along the inner portion of the ear usually, the flanks and inside of thighs, are a pure white; and an acorn-shaped patch of the same surrounds the tail, which itself is thin and "switchy," entirely bare beneath, white above, and having a black, pointed brush at the tip of hairs two to three inches in length. The short, glossy coat of the legs is of the same tawny color that gradually, during the summer, covers the entire animal, till the new "blue" coat shows itself in September. Otherwise this description applies in November, when the deer, in local phrase, begin to "run,"—*i. e.*, to rut. Of course, both sexes are then at their best. The females bring forth their young some time in June; during which month the males, having shed their horns, seclude themselves as if ashamed, "tarrying at Jericho," in fact, till the excrescence that distinguishes them be again grown.

While in the velvet, the horns are very tender. They are warm. Wound them and they bleed. Their gelatinous substance in July is a dainty tidbit to the fortunate coyotes. If you would save them, you must hang them out of reach of your dogs. Gradually, lime is deposited, the tips harden, the blood ceases to circulate, the velvety covering splits open and peels off, the animal hastening the process and the sharpening and brightening of the points by industriously rubbing them upon the bushes and trees, until, in the bright late October days, armed and exulting in his strength and sleekness, he is all ready to go a-courting; and the does, as if aware, and owning too the soft influence of the season, forsake their fawns and hide away in brake and dell. Then may be heard from hill to hill the challenge and the acceptance, and fierce battle be witnessed, in which the eager contestants heed not whomsoever may approach, till the victors retire to cool shadows and the rewards of valor, the vanquished to fight another day; or, if hopeless and superannuated, to begin a life of sulky solitude.

The novice who is ambitious to slay one of these noble and sagacious animals needs—of the very best—guide, gun, camp outfit, route, range, and luck. If the weather had not its admirable reputation for unfailing reliability in Colorado, during the shooting season, from mid-August till January, he would need also to pray for that.

If you have plenty of time and little money, buy a good pony and saddle, gun and ammunition, blankets, including a light rubber cloth or overcoat, a side of bacon, and a frying-pan,—though you will, when in permanent camp, probably, prefer to broil venison and fish on the coals,—a little salt, a sack of hard-tack, another of dried fruit, a few yards of good line, and two dozen gray hackles with brown bodies, a change of underclothing, a picket-rope, and a light hatchet, a skinning-knife, with belt and sheath, and a stout seamless sack big enough to carry your perishables; tie the lot together and set out on foot.* You can take a little rest now and then, when the road is good, on the top of all this, if balanced nicely on each side of the saddle, or you may mount to ford a river. Of course, it is supposed that you outfit at some valley town, probably Denver. At first, of a certainty, your progress will be slow. Take your time. I have enumerated the smallest possible list of *impedimenta* for a tyro. If you stay with us for good, you may some time in the future be able to set out on a trip through a few hundred miles of primitive wilderness in a buckskin suit of your own stitching, and carrying, for equipment and subsistence, your gun, three cartridges, a pinch of salt and a jackknife, like Len Pollard; or to detest salt, like Old Hill; or to make a good blanket of snow, like Doc. Porter. But, for a first experience, you will find these things very handy, and your pampered stomach will probably welcome the additions to your bill of fare procurable at ranches by the way. By the time you have reached Big Thompson, the Gunnison or the Grand, or the Upper Arkansas, or any of the smaller tributaries of the Platte, your education will be well under way.

* The pony will cost twenty to eighty dollars; saddle, bridle, etc., ten to twenty-five; a Sharp's "business" rifle, single trigger, with necessary implements, thirty to fifty; blankets, ten to fifteen; and other necessaries at about home prices, with the advantage of selection from approved stock appropriate to the precise needs of the purchaser, and guaranteed to suit.



ON THE GRAND.

Although you will manage so as to be always within reach of supplies and a post-office, the farther you get from traveled roads and recently hunted ground the better. Go till you are sure there is game about you; then settle down and take things coolly. If you find a camp of genuine and experienced hunters in the neighborhood, they may, at first, look coldly upon you, as one likely to drive the game off the accessible ranges without getting any; at any rate, driving it away from them. If you are wise, you will acknowledge yourself a novice, and remembering that their sole living may be in this, as yours in quite another and probably more lucrative kind of hunt back across the Mississippi somewhere, perhaps you will do

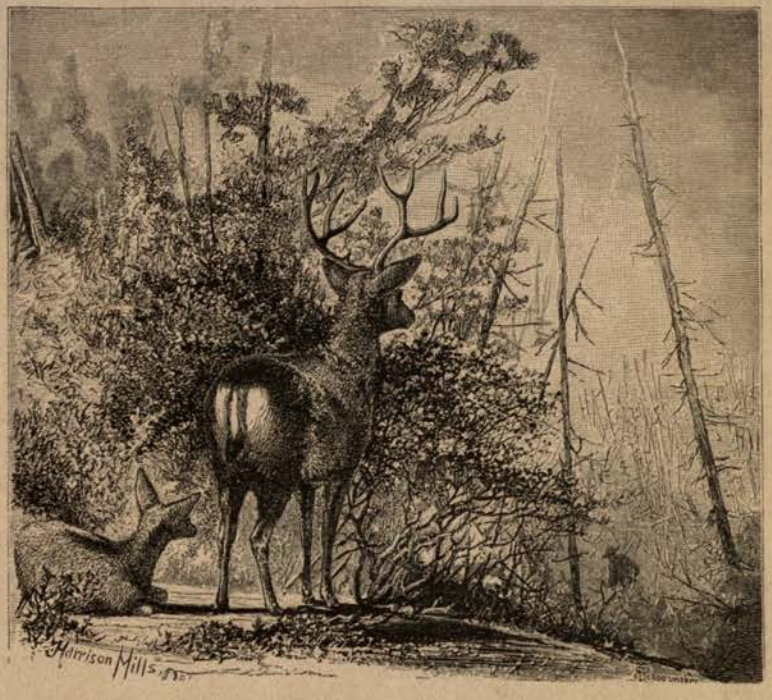
well to offer a fair equivalent—say five dollars—to the man who will take you with him and let you shoot a buck of his finding. Go with him, do just as he tells you, and you will get your first deer cheap; then, if you are keen and observant, probably, you will have learned more than a whole season of painful work by yourself would have amounted to, and your second deer will be yours without tribute.

My own first experience in still hunting in Colorado may be taken as an instance of self-confident failure. I would not take a guide. No, indeed! Had I not been a mighty hunter from my boyhood up!

So I waited for the first snow. I had passed the summer in the foot-hills with a sketching kit on my back and a rifle in my hands, and had been about equally occupied with the grand scenery and with the dusky grouse and rabbits. Once I had surprised a band of mountain sheep at a lick, by pure accident, and caused a fine old buck to ascend some hundreds of feet of steep rocks with great agility, the ball from my 36-caliber "rim-fire" only drawing a few drops of blood. Anathematizing that gun as only a tyro can, I took the first opportunity to exchange for a 50-caliber military rifle, with which I expected to fill the next opening to better purpose.

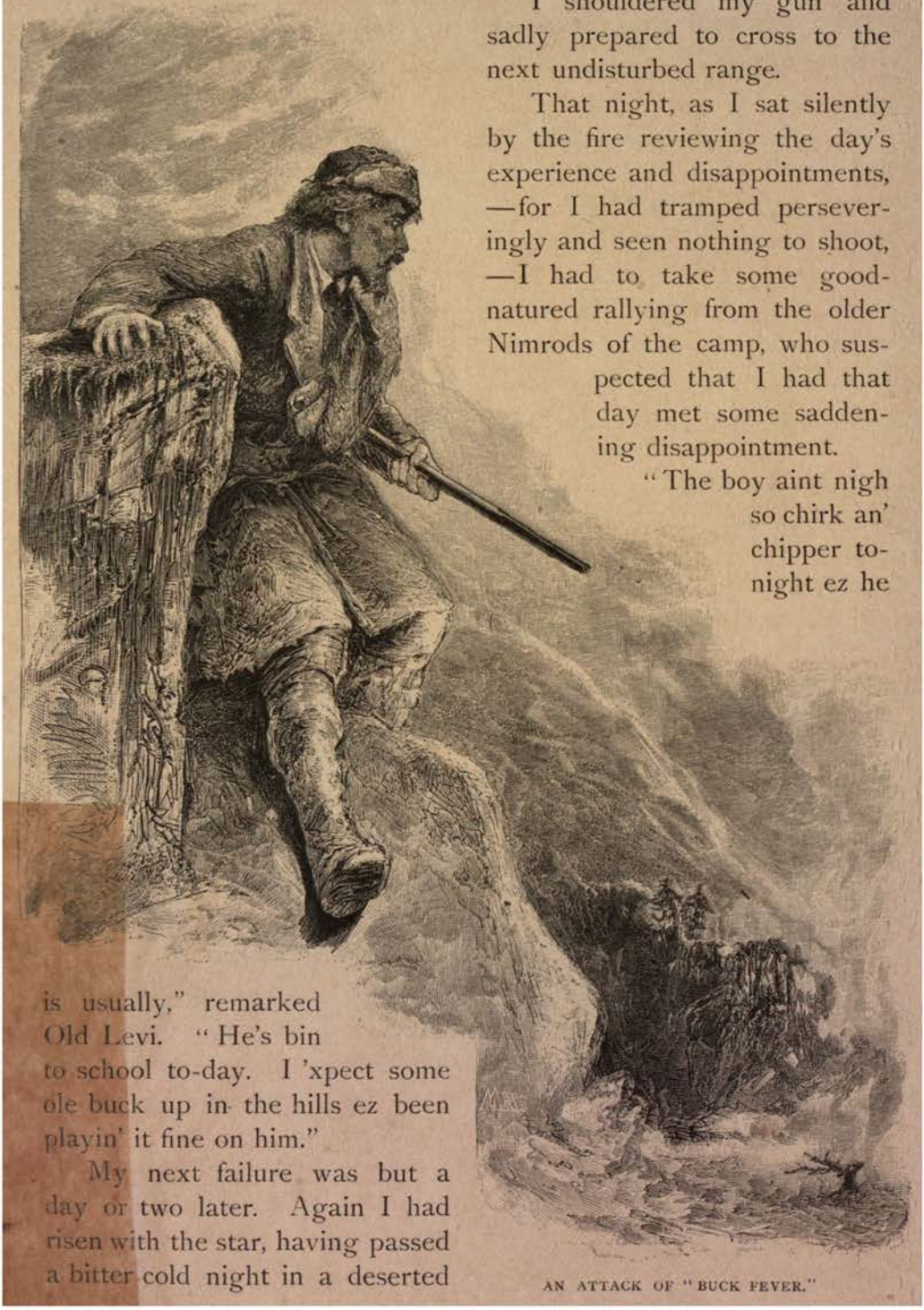
By and by the deer began to come down from the high feeding-grounds, and over the passes from the parks, and gradually to work south, "banded," and led by the old bucks, and making their way to the warm and sheltered wintering-places south of Pike's Peak. This migratory habit is observed wherever the high and rough nature of the country affords a secure summer retreat, but is too barren and storm-exposed for a winter habitat. Sometimes the hunters would break up and scatter one of these bands, and in twos and threes they would remain and infest the rough country for a time, until joined to a new leadership, and thus, timid and on the alert, they were much oftener seen than secured; the region back of Boulder being peculiarly hard hunting-ground, hilly and broken, and giving the keen-eyed and keen-nosed animals a great advantage. One November morning, at three o'clock, bound to be early, and, if hard and conscientious work might avail, to carry a trophy into camp that day, I was trudging cheerfully up Boulder Cañon through the new-fallen snow. Before the dawn began to follow up the morning star, I had climbed a slide in a crevice, some hundreds of feet, and shivered for

an hour under the pines, waiting for light enough to see to shoot. My method of approach to the foot of the long, shallow, wooded gulch in which I now stood had been well chosen. I had avoided a tedious circuit among logs, and sticks that would snap, and stones that would roll, and a peculiarly exasperating large-leaved plant, that in its dry condition rattles when touched like castanets. I knew that the deer "used" in this vicinity, for I had frequently seen sign here; I had calculated the direction of the wind, the lay of the land, my course from the light of the rising sun, so that I might see better than be seen, hear better than be heard, and, if my nose could not help me, at least to avoid offense to any keener sense of smell than my own. I thought myself very sagacious. Well, in due time I decided that there was light enough for my purpose. Cautiously up the left side of the gulch I worked from tree to tree, peering among the shadows, scanning the earth as closely as possible to see whether anything had brushed the feathery flakes that barely covered it. I took a long time, and it grew light too fast, I thought. By and by, high up at the head of a grassy swale that wound down the center, I saw three imprints of round, plump bodies. The snow was deeper here; there were trees close behind, up the gulch, but evidently there had been no desire for shelter. They had all lain so as to see down the slope, their slender legs curled under for warmth, which had melted the bed a little and pressed it closely and firm. I put my hand on the half transparent matrix: it was not frozen yet; the little white pellets of snow-dust that came with the wind, slanting and rolling along the ground, had hardly begun to accumulate in the depressions made by the knees and feet. Evidently, my quarry had lain here in full view of my slow approach; what moment had they cunningly chosen to rise and slip away like shadows? They must still be near. See, the tracks are close together and rambling. No sudden fear, or they would be in pairs and far apart. Strange, they go down the gulch, on the side opposite. Cautiously again I begin to follow the little tell-tale tokens. Very cautious before, I am preternaturally so now. Not a footfall of my own, not a breath do I permit myself to startle my own ears with. I am an hour, perhaps, following these tiny, meandering foot-prints down to a point where they turn sharply and lead straight up the side of the gulch to the ridge at its edge. A new light—the sun is up now, but it isn't that—breaks upon me. It is



ARE YOU LOOKING FOR US?

hard to believe, but evidently those deer saw me as I began to look for them, and came down through the trees here to inspect me, —to see what I was about, in fact,—and they stood right here and watched me as I passed by on the other side, not a hundred yards away. And then they follow; yes, here run the tracks, right along the ridge. The rascals have even stopped when I did, measuring their progress with mine. And now I see that the trail has doubled, half the imprints pointing this way, and I begin to suspect still more of their tantalizing cunning. Yes, it is even so. Here they stood and saw my careful inspection of their sleeping apartment, still within easy shooting distance, but partly screened by netted boughs and twigs, and here they turned again and accompanied me down again, retracing their steps; and just at the point where I began to climb out, they evidently suspected that I was really in earnest, and that they had better go. The direction of their departure was indicated by three separate lines of double exclamation points in the snow, beginning about eighteen feet from where the light broke upon me as described, and leading due west.



I shouldered my gun and sadly prepared to cross to the next undisturbed range.

That night, as I sat silently by the fire reviewing the day's experience and disappointments, —for I had tramped perseveringly and seen nothing to shoot, —I had to take some good-natured rallying from the older Nimrods of the camp, who suspected that I had that day met some saddening disappointment.

"The boy aint nigh so chirk an' chipper to-night ez he is usually," remarked Old Levi. "He's bin to school to-day. I 'xpect some ole buck up in the hills ez been playin' it fine on him."

My next failure was but a day or two later. Again I had risen with the star, having passed a bitter cold night in a deserted

AN ATTACK OF "BUCK FEVER."

cabin. This time I was successful thus far: I found sign and worked the ground carefully and correctly, my ambition spurred by what Old Levi had told me about a fabulously large buck that for four winters had used this ground, and, though frequently seen and shot at, had thus far escaped unscathed. I knew that Levi and Hank were at that moment less than a mile away, working toward the spot, and I dreamed a little of the delight of having them find me there when they arrived, with the coveted prize at my feet; but when my buck finally broke cover from among the rocks,—at my very feet, indeed,—he was such a beautiful sight, his polished antlers lying back almost upon his round, massive shoulders, his progress—flight, it truly seemed—through that too brief vista of giant rocks, through which my way had cost such labor, was something so wonderful to see that I actually forgot I carried a gun till the brute with the charmed life was a mile away. Was it "buck fever"? Well, that was the way it took me; but I never had it afterward. The others soon came up. They had seen nothing. Again that day I was so fortunate as to find, so unfortunate as to fail. We had separated, they going toward Gold Hill, I working in the direction of Sugar Loaf Mountain. At the edge of a ravine, I saw a movement in the thick growth below, faintly against the snowy bottom. I was indulging in a smoke. In my haste to remove my pipe, I dropped it. Out then came a large doe, and, still uncertain as to the exact point of danger, in short, high jumps went half way up the rise to my left. A prettier shot never offered than when she stopped, not a hundred yards away, to look at me for a moment. I had a blanket rolled and slung across my shoulder, and in my haste and flurry I forgot it; it got in the way as I brought my rifle up; I stopped to drop it, and when I fired, it was at a moving object instead of at a stationary one. I saw the dirt and snow fly a little too high and just ahead of her.

That night after sunset I was building a fire against a huge rock, in the snuggest nook I could find on the east foot of Sugar Loaf, when a tall, good-looking man in an army coat, with a huge muzzle-loader under one arm and a little yellow dog on the other, approached my bivouac.

"Hullo! Good-evening! What are you doing here such a night as this?"

The snow was drifting, and it did promise to be an ugly sort of night. However, I proceeded to explain, as a matter of course, that I was heating this rock to make my bed against; that when it and

OSBORNE AND HIS DOG.

the ground were sufficiently warmed, I proposed to move the fire out a couple of yards, replenish it, and then and there to roll up in my blankets and sleep the sleep of the just.

"Didn't you see a cabin as you came down the gulch up there?" inquired the tall man, with a puzzled or quizzical smile—I suspected a little of both.

"Yes," I replied.

"Well, what kind of people do you take us for, anyhow, to think we'd let anybody lie out such a night as this is goin' to be? Just

pick up those traps of yourn and come along with me, an' don't you ever do that again in this vie-cinity. You'd 'a' been in a nice fix here before morning."

I was on my mettle in those days, and inclined to be proud of my powers of endurance. I had quite enjoyed the prospect of practicing this kind of bed-warming, which I had heard the old fellows tell us of as something to make the pilgrim wonder, and I hardly relished the half-apparent amusement of this big mountaineer, who wasn't in the least impressed by my show of resignation and resources. One look at the black sky, that seemed to be rapidly settling earthward, decided me, however, and with a grateful acknowledgment and a half sense of relief, I followed my entertainer to his mountain home. Ah, those steaks, cut from the rump of that three-hundred-pound buck hanging in the back room! There were three inches of fat on

the edges of them, and my handsome hostess blushed before the fire, as she turned them to a beautiful brown, while the little dog looked on with an air of quiet approval and anticipation.

"That's my huntin' dog," said Big Osborne, laughing at my stare of surprise, not to say incredulity. "Yes, sir; and that's the kind of

"AND TINY SAID HE THOUGHT HE COULD."

dog for these hills. Don't scare the deer away, and always fetches 'em. I can take twenty-five dollars for that dog any day; but money can't buy him. You see, he knows as well as I do just what to do. When I get to see a band, I just put him down, and he goes right for 'em and begins to bark. Well, you see, the big ones wont run for him, and after stamping awhile they take after him. He runs a little ways, and then they stop, and he begins to bark again; and so he keeps leading 'em right toward me, or I keep working up to 'em; and they're so worried and mad and interested, that sometimes I get in two or three shots before they get wind of me at all. That's the way I got that big buck, and I reckon he'd 'a' been too cunning for me; but Tiny fetched him, and he can do it every time. Can't you, Tiny?"

And Tiny said he thought he could.

Next morning, I resumed my hunt; but, although I saw frequent indications of their recent movements—probably during the night—in large bodies, I saw no more deer, and again I returned empty-handed, this time consoled by the fact that the others had no better luck; in fact, they had not seen a deer at all.

But through failures like these is the way to ultimate success. I saw my blunders, and thought I might profit by them. I saw that I

had yet to learn how to look. There is something in knowing a deer when you see him. A friend tried long and faithfully to show a deer, standing in full view, to an eager but untrained sportsman, and then had to shoot it before he could see it. He saw it when it fell down, kicking. You look among bowlders and logs, and all are perhaps alike to you; but by and by a bowlder surprises you by jumping, without warning, twenty feet into the air, over another very large one, perhaps, and almost always up-hill; and, while your heart bumps your mouth open, the bowlder disappears, and you say, "Oh! why didn't I shoot him?" Sure enough, why?

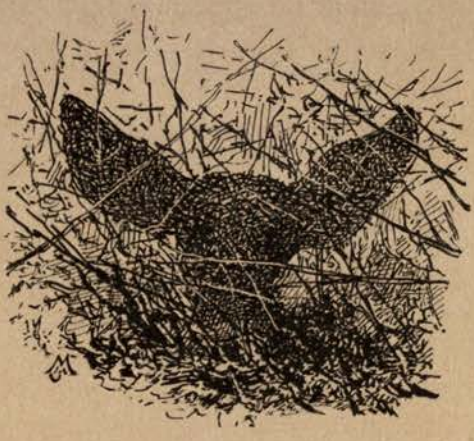
It is a most surprising thing to see a deer get up on its legs,—at home, I mean, and when he would prefer to be alone. Watch a cow at the same operation. Laborious elevation of one end, then of the other; then a great yawn, and a cracking of joints, and a lazy twist of the tail and a mighty snort of bovine satisfaction, and she is ready to go to pail or pasture. But she don't budge, mind, without the regular formula. How does a buck start for pasture when you drive him up in the morning? Why, he lies with his four feet under him, and when he is ready to go it is like Jack getting out of the box. The tremendous extensor muscles contract with all the power and facility rest and warmth have given them, and the plump body, like a well-inflated rubber ball propelled by a vigorous kick, flies lightly into the air. The simile is borne out as it seems about to descend; light as thistle-down it nears the earth; another giant impulse from an unseen power—*crash*—and again it describes its light parabola; *crack* — *bump* — *thud* — *thud* — *thud* —each time fainter than the last, and your surprise is all that remains.

The time, patience, effort, and study I spent during that winter and the summer and winter following in learning how to outwit that subtlest of all harmless creatures would have mastered a much more exact science. I realized a degree of success, however; and when I stood over my first buck, not chance slain, but really outdone in craft, shot through the heart as he sprang to his feet and turned to see me not twenty steps away,—seeing me and suspecting danger only at the instant of his death, while I had followed him for hours, unsuspected, patiently, perseveringly,—I felt that the achievement was worth all it had cost. Meantime, I had risen with the morning star for days together, crept through miles upon miles of all sorts of

growth and over all sorts of ground; had seen scores of deer, wounded a few, to my great regret, but, as a rule, had been sparing of ammunition, unwilling to miss or only to maim. And so I came to know them well, and I am glad to say that I was never tempted to harm an inexperienced and careless fawn, or the doe cumbered with maternal cares, although opportunities were frequent for making sure work with these.

I think the man that can kill a "papoose"—unless impelled by the hunger that knows no law—is no better than an Indian. He is a grade worse. Here, in Colorado, the game-law lets a man kill a deer out of season if he is hungry or if his family needs the meat. It ought to imprison the man who will kill a fawn for any other reason, or even then, if he can get jack-rabbits instead. I once heard Len Pollard tell about killing a doe in the bad lands when he was almost starving, on one of his wild journeys. It was July. She was very poor, but Len was hungry. As he stooped to bleed her, something touched the hand that was drawing his knife. It was a little fawn, and right behind it in the bushes was its twin. Both came and smelt the body, and then licked the hunter's hands. Len is made of good stuff, and he couldn't stand that. He mounted his horse, but the little things followed, and finally he turned and mercifully killed both of them rather than leave them to starve. But he recalls it rather in the light of a tragedy.

Leaving camp early, but not until after a good breakfast, with a brace of invalids whose Colorado appetites are beginning to clamor for relief from the monotony of fresh trout, caught from the stream beside which is our rest, and which the Indians call Yampah,—with light enough to show a moving object a mile away, or a fresh track from the saddle, I will suppose myself, one September morning, five years after the day of disappointment just described, riding at a leisurely pace up a long hollow in a hill-side with an east and south exposure. I have never hunted here until now, but I see groves of quaking asp succeed each other for miles away to the right; and, through occasional vistas to the left, the black pine-tops show, rising from the river by west and north slopes to meet me on the rounded crest bared by last year's fires. There the ground will surely show if any of the kind I seek have lately passed, and those groves are the haunts they love. Skirting their upper edges, with now and then



A PATTERN IN A NET OF TWIGS.

an incursion, I ride for miles. Not a sign. I ride now with haste, for not until I see sign will I begin to hunt. Suddenly, a fresh track—two of them—leisurely winding downward. In a moment, alert, I am on the ground, taking the rein over my pony's head as, rifle in hand, I dismount, so that if I let him go he will put his foot in it presently and hold himself there. (A lariat looped at the saddle-fork, or held coiled in the left hand ready to drop, Indian fashion, is also good.) I intend to leave him here to feed while I prowl around to watch and listen, but presently I make out a peculiar pattern in the net-work of low branches and little sprouts of trees. It is very significant to me; I know there can be no mistake about it, and I immediately send a ball just under the center portion. The pattern disappears without noise, and I reload, catch my pony, that has merely stepped aside at the flash and report of my 44-caliber Creedmoor, and lead him about sixty yards into the thicket, and there lies a fine fat doe.

After some dexterous use of the knife, a noose of the lariat back of her shoulders, a turn forward about the "horn" of the saddle, a few tugs and hitches, and the limp one hundred and fifty pounds is secured by the hooks in the cinch,—for this case made and provided; my patient old Cub, meantime, pretending a vicious attack upon my buckskin breeches, but standing stanchly while I lift and make all fast and secure. Then my gun slung across my shoulder, the sunset in our faces, Cub and I jog lazily toward camp. The sage-hen rises noisily and unwillingly, with much cackle, from our very feet; noise-

less prowlers, long and lithe, slip from shadow to shadow; the coyote yelps complainingly in the distance, and a camp-fire is twinkling away down by the dim river.

So long as he knows he is unobserved,—and your old buck is as shrewd as a man in judging of this,—he stands and eyes the hunter with the coolest curiosity. The moment the approach is direct, changing from oblique, or the hunter conceals himself, or halts and crouches, that moment "old smarty" runs away. The gun should be at the shoulder when the hunter halts to shoot, or there is no time. Often he will lie and lazily watch the approaching enemy, as, gun in hand, he labors along through fallen wood and rocks, and after perhaps a half hour's enjoyment of the game of hide-and-seek, the search getting a little too warm, he will at one jump from his lair, clear a huge rock or log and disappear, his feet leaving the exact imprints in which they have rested perhaps for hours. Frequently, the only evidence the hunter has of his vicinity is the break-neck clatter and crash, sudden as an avalanche, in which the alarmed animal seeks safety and at the same time warns all of his fellows. The best plan then is for the hunter to take another tack, in doing which he may possibly find his game doubling upon him, particularly if he strike for higher ground.

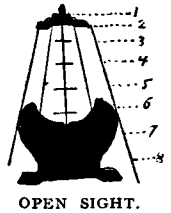
Don't continually try your gun at a mark. It scares the hunters and the game. "What a nice spot to shoot at!" or, "See if I can't hit that tree 'way over there," says Tenderfoot, and presently some startled mountaineer yells out, "Here! who the future condition of misery are you a-shootin'?" which is an awkward query when propounded by an ugly-looking man with a navy armament in his belt. You might hit him after honestly missing a deer or a bear, and he wouldn't blame you so much; but he detests this aimless fusilade which only drives away the game. He suspects, too, that this waster of ammunition will have poor success; for a "dead shot," even, at a target may be a muff in the game country.

Try to be cool enough to mark whether your ball strikes over or under when you miss a shot with a hill-side background. After awhile you will instinctively measure distances and elevate accordingly. Whatever theoretical sportsmen may say, you can just as well estimate a scale to elevate to as the distance of your object, and

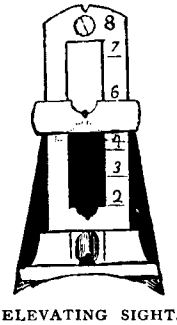
can judge of the perpendicular from bead to notch just as well without the upright bar, or "elevated sight," to waste time in adjusting.

This is the practice of all the old hunters of my acquaintance: Draw on your object fine, as if close by; then, keeping the bead on him, lower the breech carefully till you can see such full elevation of sight, or portion of barrel below it, as in your judgment, guided by experience, is equivalent to the distance, and cut loose. If your rifle is of small caliber, say $\frac{40}{100}$, and uses the long ball, with a heavy charge of powder, making a low trajectory, you will rarely, in these mountains, need to draw coarser than the whole height of the "front sight," or up to, say, twice its height for three hundred yards or a little over. Of this you must know by experiment, however, the amount and strength of powder, weight and density of ball, etc., varying in many cases, as well as the height of sights and distance between them.*

At first, you had better take only such chances as offer within sure range. Take the body rather than the head, and well forward, —just at the point of the shoulder is best. Pull as though you had



OPEN SIGHT.



ELEVATING SIGHT.

got all day to do it in, even if you use double triggers, which are an abomination.

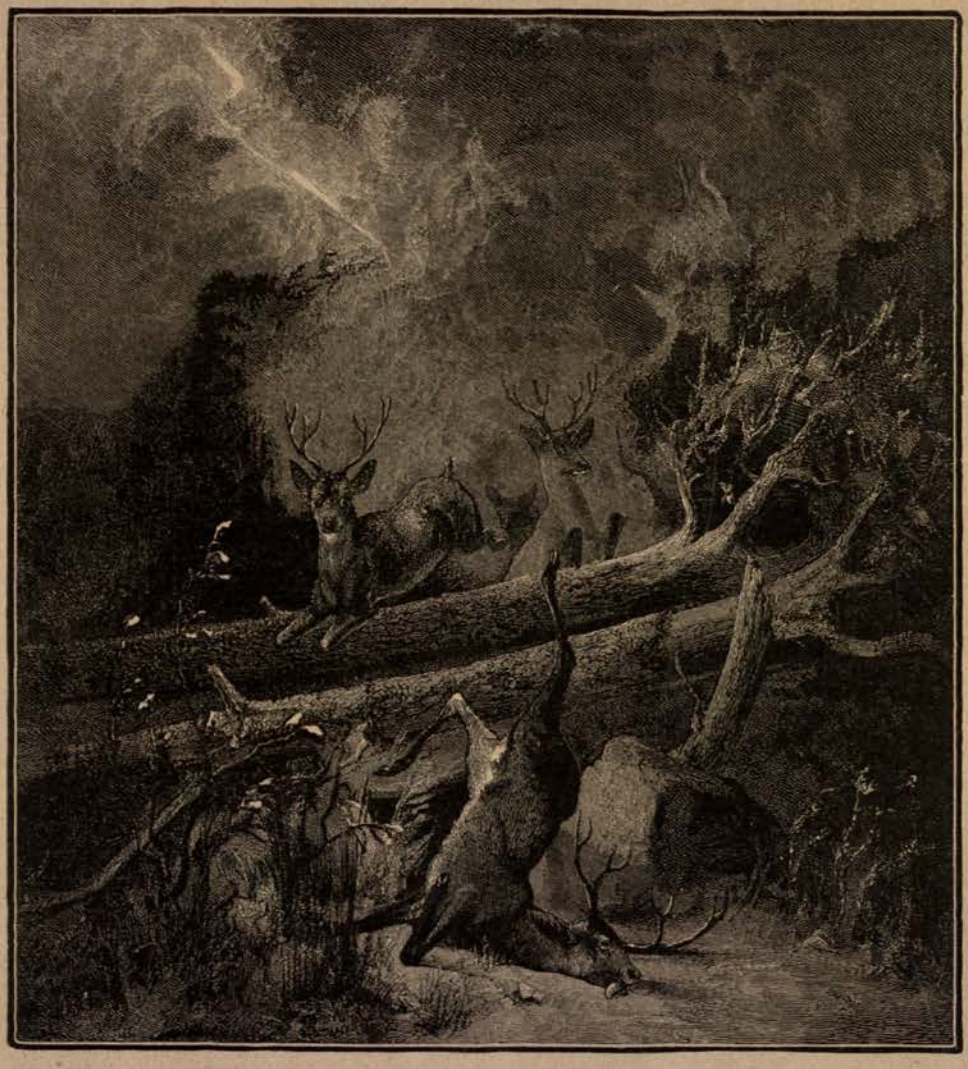
* In showing the hunter's method of "elevating," I have also illustrated a device of my own, which, upon careful trial, will be found to serve as a ready and faithful substitute for the bar and slide. Let your gunsmith sink a line from behind the bead straight toward the notch of the "buck-horn" sight. At intervals, to mark the degree of elevation for 150, 200, 300, 400, or 500 yards, these intervals determined by experiment, or by looking through a "peep" sight placed, as usual, back of the breech, cut cross-lines wide and deep enough to be distinctly seen. Of course, the perpendicular line from the bead must, in sighting, fill the notch center, and the cross-line for the distance required may seem to rest upon the top of the buck-horn. The novice in "off-hand" shooting will find this a great help to his progress.

Morning and evening are best to hunt in. In the bright of the moon, deer feed at night, resting while the sun is high. If not much hunted, they lie in the shade, not far from water; if often alarmed, they "roost high" and keep a good lookout, or perhaps leave for a quieter range. Fires and smoke they detest, and they soon learn to associate the report of fire-arms with the presence and scent of human beings. Still, by judicious method, they may be "herded," till you have all the meat you can take care of.

If a mountain man tells you that he don't know where the game is, believe him. It has become so unsettled by constant and careless hunting (which does not deserve the name—"driving" would better express it) that one must be in constant experience to know its present accessible haunt. It may be plentiful here to-day and gone to-morrow. The incursions of coyotes and foxes among the fawns, and the approach of a mountain lion, or of a man that shoots incessantly, are marching orders to them. Also, to repeat, fire and smoke they particularly abhor. At almost any season, a conflagration may occur, originating in the criminal carelessness or ignorance of some one who has failed to put out his camp-fire, or in the detestable policy of the Indians, or some malcontents among them, at least, who set these fires to destroy the timber that might be of use to the whites and to drive away the game into their own country, it being their policy to disturb their own "cattle," as they term them, as little as possible.

Remember that to see your game before it sees or smells you is the greatest advantage. It sometimes happens that when already in motion, not thoroughly startled, but suspicious, it may be induced to stop and turn by a shrill whistle or a stone thrown in advance. If approaching you and unaware of you, the first will nearly always prove the best thing to do. In the instance illustrated in the picture entitled "The Fall of the Leader," a small band of males is in full flight from the course of a sudden storm. The leader, some yards in advance, stops suddenly, with ears and eyes alert to find the source and cause of an unfamiliar sound more startling than the roar of the winds behind, and, smitten in the same instant, clears at one leap the last intervening logs and yields his life in the dry path of the coming flood.

Always picket or hobble your animals at night, or at least picket one of them—the leader, if they acknowledge one. Neglect of this will cost time and money and vexation.



THE FALL OF THE LEADER.

If you get lost, stay where you are till somebody finds you or you find yourself; *i. e.*, discover some landmark to guide you back. If you have familiarized yourself with the countenances of the high peaks and their bearings, direction of water-courses, etc., and have been careful to take a good look *back* now and then, you can hardly fail to retrace your steps.

In following a trail, if it suddenly disappears, carefully note the spot where your uncertainty begins, so that you may, at least, find that again. Usually this will occur where pack animals stray or straggle aside to feed, and the riders leave the trail to drive them in,

A DISSOLVING VIEW.

or on difficult crossings of swampy bottoms, where slow progress makes it necessary for a party to widen out, each picking his own way. By careful scrutiny of the far side of the open space, morass, or intervening growth, you may usually see, or at least see indications, of the trail you seek.

To save meat for future use, cut it in thin strips, with the grain, and string them on a lariat in the sun. After a few hours of exposure, which may be at successive camps if necessary, it will be thoroughly "jerked." Salt is not indispensable.

Always have matches about you, in some water-proof receptacle.

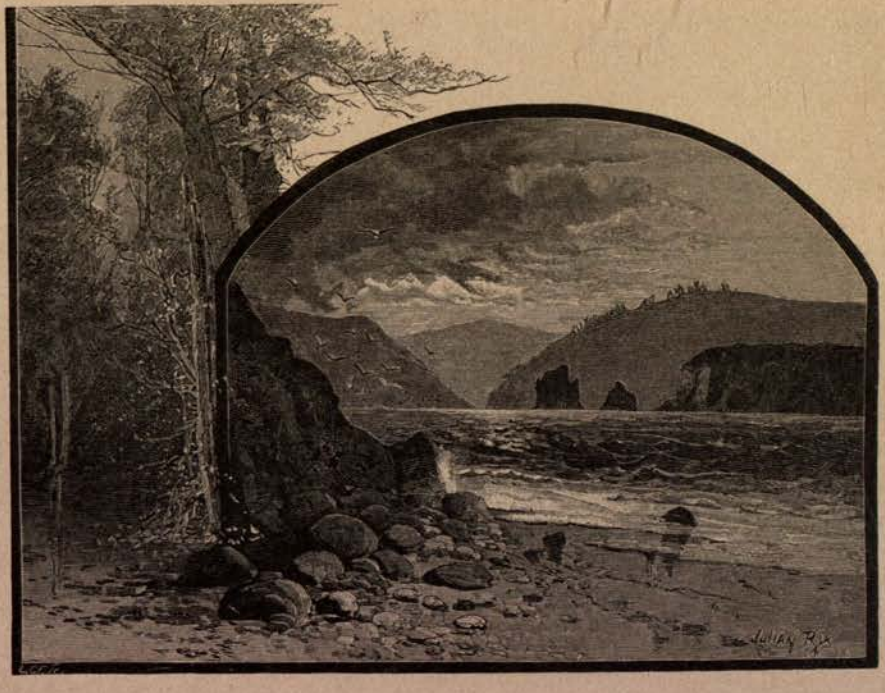
Let a bear cub alone. Fool with an old bear if you must, but be sure there is no small family about.

In fording a river, look out for "quicks." These, I believe, are never found in swift water. The "riffles"—a term probably peculiar to the West, where the stream widens, or below a bend, particularly if there be islands or bars—indicate the places where you may attempt to ford.

Choose rocky or clayey ground, if possible, or clear sand, to build your fire upon; if on a muck of pine-needles, it will burrow, and water will not quench it all. Then, in a day or two, the whole country is burning over and the game driven away, to say nothing of the possible peril to others, and the destruction of the forests.

This is not the whole art of woodcraft, but it will do to begin with, and may suffice. As a closing word, I advise you to be tem-

perate, and, while doing your share, not to attempt too much. Find a good place and go into camp, instead of trying to do the whole West in a season, and you will probably count among your pleasantest recollections your deer-hunts and hunting-camps in Colorado.



THE WILD SHEEP OF THE SIERRA.

By JOHN MUIR.

THE wild sheep ranks highest among the animal mountaineers of the Sierra. Possessed of keen sight and scent, immovable nerve, and strong limbs, he dwells secure amid the loftiest summits of the Alps, from one extremity of the range to the other; leaping unscathed from crag to crag, up and down the fronts of giddy precipices, crossing foaming torrents and slopes of frozen snow, exposed to the wildest storms, yet maintaining a brave, warm life, and developing from generation to generation in perfect strength and beauty.

Nearly all the lofty mountain chains of the globe are inhabited by wild sheep, which, by the best naturalists, are classified under five distinct species. These are the argali (*Ovis ammon*, Linn.), found throughout all the principal ranges of Asia; the burrhal (*Ovis burrhel*), of the upper Himalayas; the Corsican moufflon (*Ovis musimon*, Pal.); the African wild sheep (*Ovis tragelephus*, Cuv.); and the American big horn, or Rocky Mountain sheep (*Ovis Montana*, Cuv.). To this last-named species belongs the wild sheep of the Sierra Nevada. Its range, according to Professor Baird, of the Smithsonian Institution, extends "from the region of the upper Missouri and Yellowstone to the Rocky Mountains and the high grounds adjacent to them on the eastern slope, and as far south as the Rio Grande. Westward it extends to the coast ranges of Washington Territory, Oregon, and California, and follows the highlands some distance into Mexico."* Throughout the vast region bounded on the east and west by the Wasatch Mountains and the Sierra Nevada, there are more than a hundred independent ranges and

* Pacific Railroad Survey, vol. viii., page 678.

mountain groups, trending north and south in close succession, range beyond range, with summits rising from eight to twelve thousand feet above the level of the sea, every one of which, according to my own observations, is, or has been, inhabited by this species of sheep.

Compared with the argali, which, considering its size and the vast extent of its range, is probably the most important of all the wild sheep, our species is, perhaps, a little larger, and the horns are more regularly curved and less divergent. The more important characteristics are, however, essentially the same, some of the best naturalists maintaining that the two are only varied forms of one species. In accordance with this view, Cuvier conjectures that the argali may have been distributed over this continent from Asia by crossing Behring Straits on ice.

On account of the extreme variability of the sheep under culture, it is generally supposed that the innumerable domestic breeds have all been derived from the few wild species; but the whole question is involved in obscurity. According to Darwin, sheep have been domesticated from a very ancient period, the remains of a small breed, differing from any now known, having been found in the famous Swiss lake dwellings.

Compared with the best-known domestic breeds, we find that our wild species is more than twice as large; and, instead of an all-wool garment, the wild wears a thick overcoat of hair like that of the deer, and an under-covering of fine wool. The hair, though rather coarse, is comfortably soft and spongy, and lies smooth, as if carefully tended with comb and brush. The predominant color during most of the year is brownish-gray, varying to bluish-gray in the autumn; the belly and a large, conspicuous patch on the buttocks are white; and the tail, which is very short, like that of a deer, is black, with a yellowish border. The wool is always white, and grows in beautiful spirals down out of sight among the straight, shining hair, like delicate climbing vines among stalks of corn.

The horns of the male are of immense size, measuring in their greater diameter from five to six and a half inches, and from two and a half to three feet in length around the curve. They are yellowish-white in color, and ridged transversely, like those of the domestic ram. Their cross-section near the base is somewhat triangular in outline and flattened over toward the tip. In rising from the head,

they curve gently backward and outward, then forward and outward, until about three-fourths of a circle is described, and until the flattened, blunt tips are about two feet apart. Those of the female are flattened throughout their entire length, less curved than those of the male, and much smaller, measuring less than a foot along the curve.

A ram and ewe that I obtained near the Modoc lava-beds, to the north-east of Mount Shasta, measured as follows:

	Ram, ft.	in.	Ewe, ft.	in.
Height at shoulders	3	6	3	0
Girth around shoulders	3	11	3	3¾
Length from nose to root of tail	5	10¼	4	3½
Length of ears	0	4¾	0	5
Length of tail	0	4½	0	4½
Length of horns around curve	2	9	0	11½
Distance across from tip to tip of horns	2	5½		
Circumference of horns at base	1	4	0	6

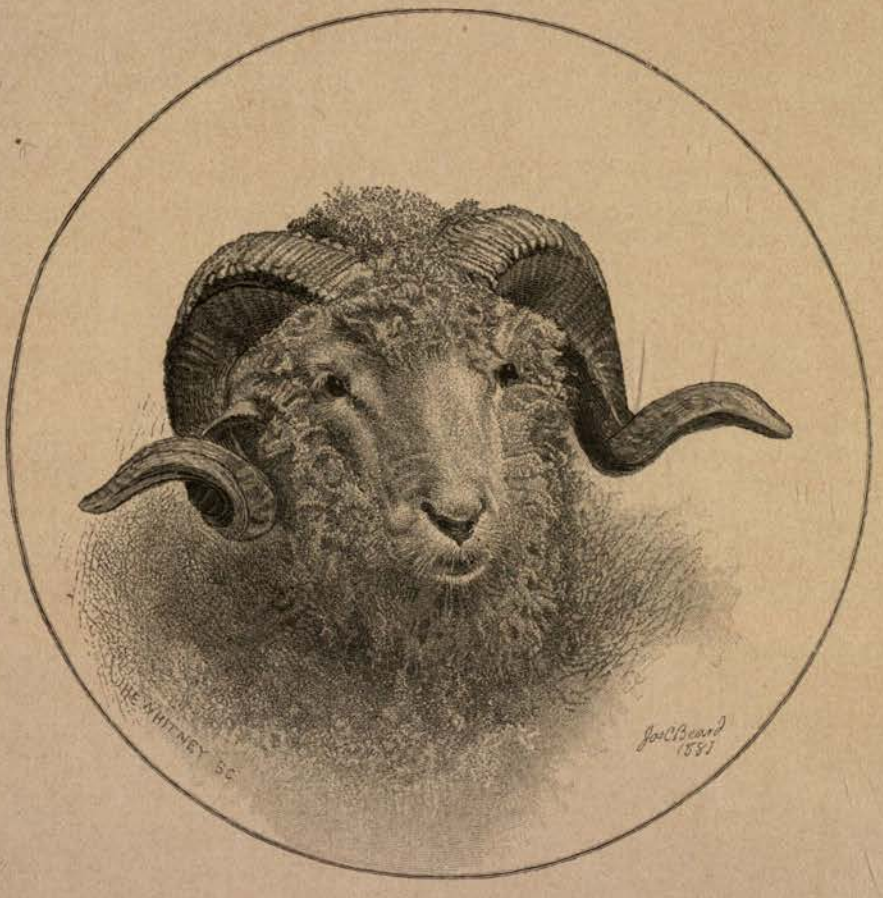
The measurements of a male obtained in the Rocky Mountains by Audubon vary but little as compared with the above.

The weight of his specimen was three hundred and forty-four pounds,* which is, perhaps, about an average for full-grown males. The females are about a third lighter.

Besides these differences in size, color, clothing, etc., as noted above, we may observe that the domestic sheep, in a general way, is expressionless, like a dull bundle of something only half alive, while the wild is as elegant and graceful as a deer, and every movement tells the strength and grandeur of his character. The tame is timid; the wild is bold. The tame is always more or less ruffled and dirty; while the wild is as smooth and clean as the flowers of his mountain pastures.

The earliest mention that I have been able to find of the wild sheep in America is by Father Picolo, a Catholic missionary at Monterey, in the year 1797, who, after describing it, oddly enough, as "a kind of deer with a sheep-like head, and about as large as a calf one or two years old," naturally hurries on to remark: "I have eaten of these beasts; their flesh is very tender and delicious." Mackenzie, in his northern travels, heard the species spoken of by

* Audubon and Bachman's "Quadrupeds of North America."



HEAD OF THE MERINO RAM (DOMESTIC).

DRAWN BY JAMES C. BEARD.

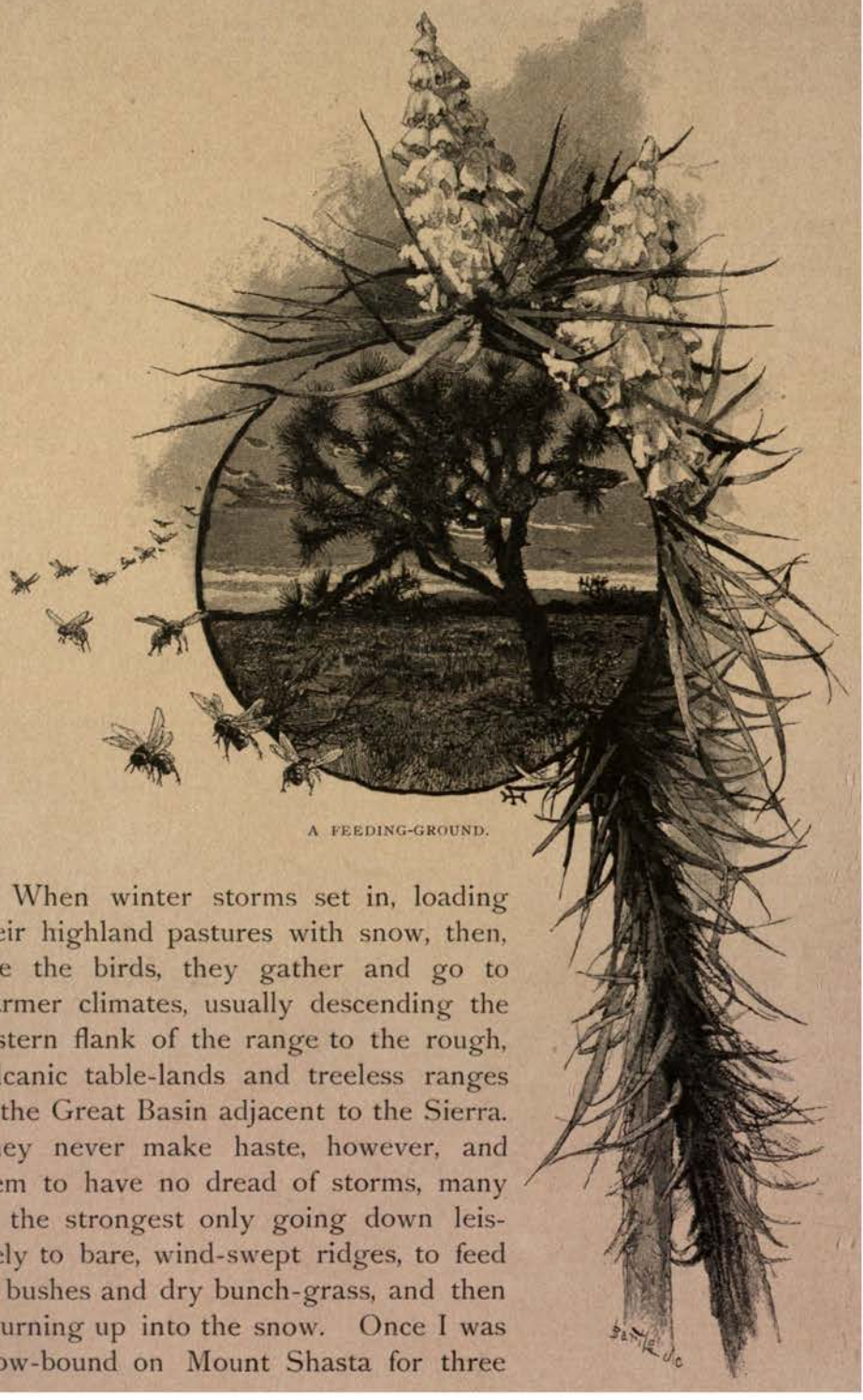
the Indians as "white buffaloes." And Lewis and Clark tell us that, in a time of great scarcity on the head-waters of the Missouri, in their journeys they saw plenty of wild sheep, but they were "too shy to be shot."

A few of the more energetic of the Pah Ute Indians hunt the wild sheep every season among the more accessible of the California Alps, in the neighborhood of passes, where, from having been pursued, they have at length become extremely wary; but in the rugged wilderness of peaks and cañons, where the foaming tributaries of the San Joaquin and King's rivers take their rise, they fear no hunter save the wolf, and are more guileless and approachable than their tame kindred.

I have been greatly interested in studying their habits during the last ten years, while engaged in the work of exploring those high regions where they delight to roam. In the months of November and December, and probably during a considerable portion of midwinter, they all flock together, male and female, old and young. I once found a complete band of this kind numbering upward of fifty, which, on being alarmed, went bounding away across a jagged lava-bed at admirable speed, led by a majestic old ram, with the lambs safe in the middle of the flock.

In spring and summer, the full-grown rams form separate bands of from three to twenty, and are usually found feeding along the edges of glacier meadows, or resting among the castle-like crags of the high summits; and whether quietly feeding or scaling the wild cliffs for pleasure, their noble forms and the power and beauty of their movements never fail to strike the beholder with lively admiration.

Their resting-place seems to be chosen with reference to sunshine and a wide outlook, and most of all to safety from the attacks of wolves. Their feeding-grounds are among the most beautiful of the wild gardens, bright with daisies, and gentians, and mats of purple bryanthus, lying hidden away on rocky headlands and cañon sides, where sunshine is abundant, or down in shady glacier valleys, along the banks of the streams and lakes, where the plushy sod is greenest. Here they feast all summer, the happy wanderers, perhaps relishing the beauty as well as the taste of the lovely flora on which they feed, however slow tame men may be to guess their capacity beyond grass.



A FEEDING-GROUND.

When winter storms set in, loading their highland pastures with snow, then, like the birds, they gather and go to warmer climates, usually descending the eastern flank of the range to the rough, volcanic table-lands and treeless ranges of the Great Basin adjacent to the Sierra. They never make haste, however, and seem to have no dread of storms, many of the strongest only going down leisurely to bare, wind-swept ridges, to feed on bushes and dry bunch-grass, and then returning up into the snow. Once I was snow-bound on Mount Shasta for three

days, a little below the timber-line. It was a dark and stormy time, well calculated to test the skill and endurance of mountaineers. The snow-laden gale drove on, night and day, in hissing, blinding floods, and when at length it began to abate, I found that a small band of wild sheep had weathered the storm in the lee of a clump of dwarf pines a few yards above my storm-nest, where the snow was eight or ten feet deep. I was warm back of a rock, with blankets, bread, and fire. My brave companions lay in the snow, without food, and with only the partial shelter of the short trees, yet made no sign of suffering or faint-heartedness.

In the months of May and June, they bring forth their young, in the most solitary and inaccessible crags, far above the nesting-rocks of the eagle. I have frequently come upon the beds of the ewes and lambs at an elevation of from twelve to thirteen thousand feet above sea-level. These beds are simply oval-shaped hollows, pawed out

among loose, disintegrating rock-chips and sand, upon some sunny spot commanding a good outlook and partially sheltered from the winds that sweep those lofty peaks almost without intermission. Such is the cradle of the little mountaineer, aloft in the very sky; rocked in storms, curtained in clouds, sleeping in thin, icy air; but, wrapped in his hairy coat, and nourished by a strong, warm mother, defended from the talons of the eagle and teeth of the sly coyote, the bonnie lamb grows apace. He soon learns to nibble the tufted rock-grasses and leaves of the white spiræa; his horns begin to shoot, and before summer is done he is strong and agile, and goes forth with the flock, watched by the same divine love that tends the more helpless human lamb in its warm cradle by the fireside.

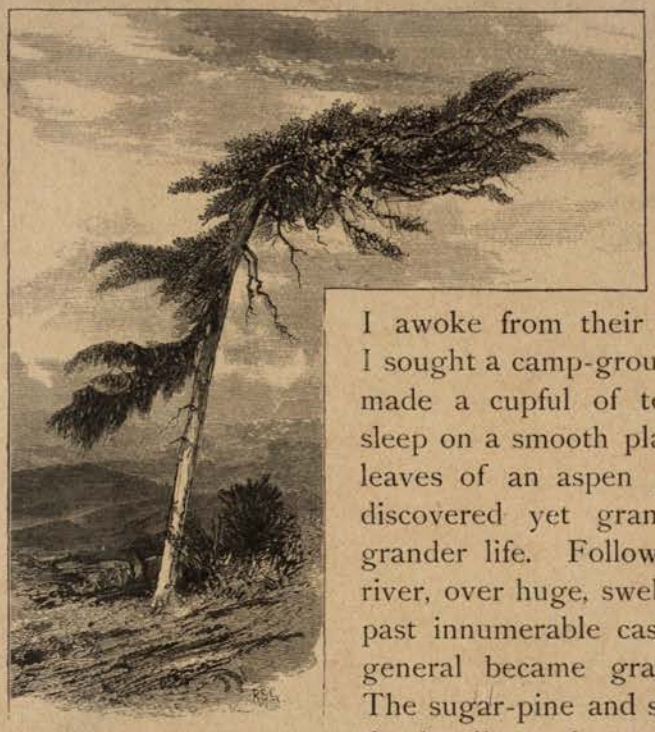
Nothing is more commonly remarked by noisy, dusty trail-travelers in the high Sierra than the want of animal life—no birds, no deer, no squirrels. But if such could only go away quietly into the wilderness, sauntering afoot with natural deliberation, they would soon learn that these mountain mansions are not without inhabitants, many of whom, confiding and gentle, would not try to shun their acquaintance.

In the fall of 1873, I was tracing the South Fork of the San Joaquin up its wild cañon to its farthest glacier fountains. It was the season of Alpine Indian summer. The sun beamed lovingly; the squirrels were nutting in the pine-trees, butterflies hovered about the last of the golden-rods, willow and maple thickets were yellow, the meadows were brown, and the whole sunny, mellow landscape glowed like a countenance with the deepest and sweetest repose. On my way over the shining, glacier-polished rocks along the foaming river, I came to an expanded portion of the cañon, about two miles long and half a mile wide, inclosed with picturesque granite walls, like those of Yosemite Valley, the river pouring its crystal floods through garden, meadow, and grove in many a sun-spangled curve.

This hidden Yosemite was full of wild life. Deer, with their supple, well-grown fawns, bounded from thicket to thicket as I advanced. Grouse kept rising from the brown grass with a great whirring of wings, and, alighting on low branches of pine or poplar, allowed a near approach, as if pleased to be observed. Farther on,

THE WATER-OUSEL.

a broad-shouldered wild-cat showed himself, coming out of a grove, and crossing the river on a flood-jamb of logs, halting for a moment to look back. The bird-like tamias frisked about my feet everywhere among the pine-needles and seedy grass-tufts. Cranes waded the shallows of the river-bends, the kingfisher rattled from perch to perch, and the blessed ousel sang amid the spray of every cascade. Where may lonely wanderer find a more beautiful family of mount-



WILLIAMSON SPRUCE TREE.

ain-dwellers, earth-born companions, and fellow-mortals? It was afternoon when I joined them, and the glorious landscape faded in the gloaming before I awoke from their enchantment. Then I sought a camp-ground on the river-bank, made a cupful of tea, and lay down to sleep on a smooth place among the yellow leaves of an aspen grove. Next day, I discovered yet grander landscapes and grander life. Following the curves of the river, over huge, swelling rock-bosses, and past innumerable cascades, the scenery in general became gradually more Alpine. The sugar-pine and silver-fir gave place to the hardier cedar and Williamson spruce. The cañon walls became more rugged and bare, and gentians and Arctic daisies became more abundant in the gardens and strips of meadow along the streams. Toward the middle of the afternoon I came to another valley, strikingly wild and original in all its features, and perhaps never before touched by human foot. As regards area of level bottom-land, it is one of the very smallest of the San Joaquin Yosemites, but its walls are sublime in height, rising at a bound into the thin sky two to four thousand feet above the river. At the head of the valley the main cañon forks, as is found to be the case in all Yosemites. The formation of this one is due to the action of two vast ice-rivers, whose fountains lay to the eastward, on the flanks of Mounts Humphrey and Emerson, and a cluster of nameless peaks farther south. On the slow recession of those rock-grinding glaciers, at the close of the Glacial Period, this valley basin came to light: first a lake, then a sedgy meadow, then, after being filled in with flood and avalanche bowlders, and planted with trees and grasses, it became the Yosemite of to-day—a range for wild sheep and wild men.

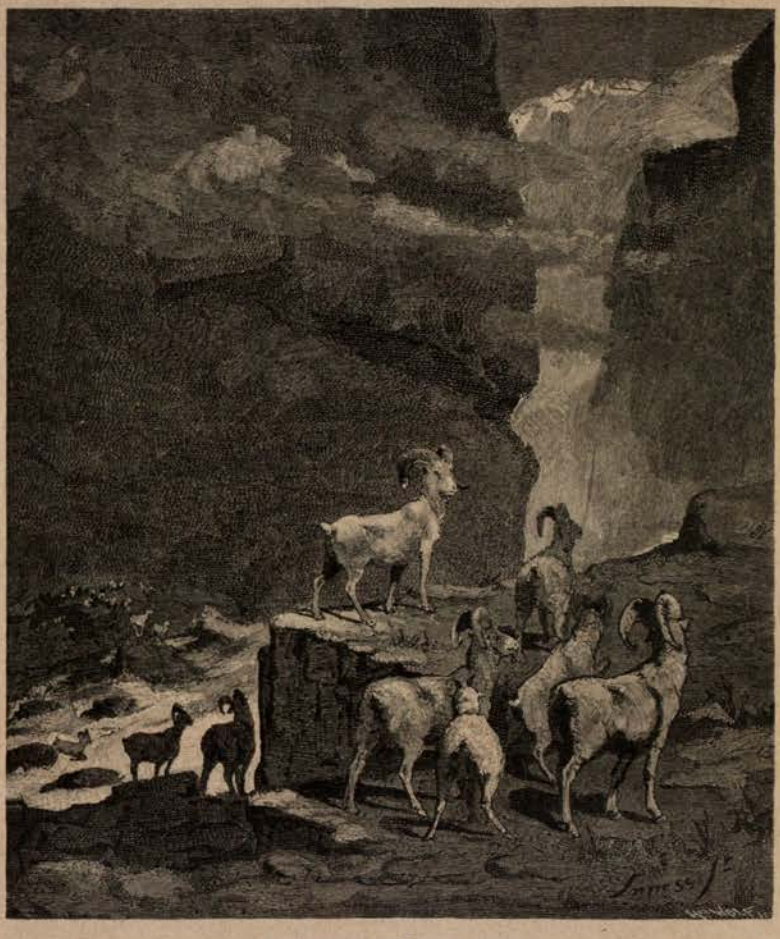
The gray bowlder-chafed river was singing loudly through the valley, but above its massy roar I heard the deep booming of a water-fall, which drew me eagerly on. Emerging from the tangled

IN A SIERRA FOREST.

avalanche of groves and briers at the head of the valley, there, in full view, appeared the young San Joaquin fresh from its glacier fountains, falling white and free in a glorious cascade, between granite walls two thousand feet high. The steep incline down which the glad waters thundered seemed to bar all farther progress. It was not long, however, before I discovered a crooked seam in the rock, by which I was enabled to climb to the edge of a terrace that crosses the cañon and divides the cataract nearly in the middle. Here I sat down to take breath and make some entries in my note-book, taking advantage, at the same time, of my elevated position

above the trees to gaze back over the valley into the heart of the noble landscape, little knowing the while what neighbors were near.

After spending a few irregular minutes in this way, I chanced to look across the fall, and there stood three sheep quietly observing me. Never did the sudden appearance of a mountain, or water-fall, or human friend, so forcibly seize and rivet my attention. Anxiety to observe accurately on so rare an occasion checked boisterous enthusiasm. Eagerly I marked the flowing undulations of their firm, braided muscles, their strong legs, ears, eyes, heads, their graceful, rounded necks, the color of their hair, and the bold, upsweeping, cycloidal curve of their noble horns. When they moved, I devoured every gesture, while they, in nowise disconcerted either by my attention or by the tumultuous roar of the falling water, advanced deliberately alongside the rapids between the two divisions of the cataract, turning now and then to look at me. Presently they came to a steep, ice-burnished acclivity, which they ascended by a quick succession of short, stiff-legged leaps, reaching the top without a struggle. This was the most startling feat of mountaineering I had ever witnessed, and, considering only the mechanics of the thing, one's astonishment could hardly have been greater had they displayed wings and taken to flight. "Sure-footed mules" on such ground would have fallen and rolled like loosened bowlders. Many a time, where the slopes were far lower, I have been compelled to take off my shoes and stockings, tie them to my belt, and creep barefoot with the utmost caution. No wonder, then, that I watched the progress of these animal mountaineers with keen sympathy, and exulted in the boundless sufficiency of wild nature displayed in their invention, construction, and keeping. But judge the measure of my good fortune when, a few minutes later, I caught sight of a dozen more in one band, near the foot of the upper fall. They were standing on the same side of the river with me, distant only twenty-five or thirty yards, and looking as unworn and perfect as if created on the spot. It appeared by their tracks, which I had seen on the meadow, and by their present position, that when I came up the cañon they were all feeding together down in the valley, and in their haste to reach high ground, where they could look about them to ascertain the nature of the strange disturbance, they were divided, three ascending on one side the river, the rest on the



CROSSING A CAÑON STREAM.

other. The main band, headed by an experienced chief, now began to cross the rapids. This was another exciting feat; for, among all the varied experiences of mountaineers, the crossing of boisterous, rock-dashed torrents is found to be the most trying to the nerves. Yet these fine, brave fellows walked fearlessly to the brink, and jumped from bowlder to bowlder, holding themselves in perfect poise above the whirling, confusing current, as if they were doing nothing extraordinary.

The immediate foreground of this rare picture was glossy, ice-burnished granite, traversed by a few bold lines in which grew rock-ferns and tufts of healthy bryanthus, with the gray cañon walls on the sides nobly sculptured and adorned with brown cedars and

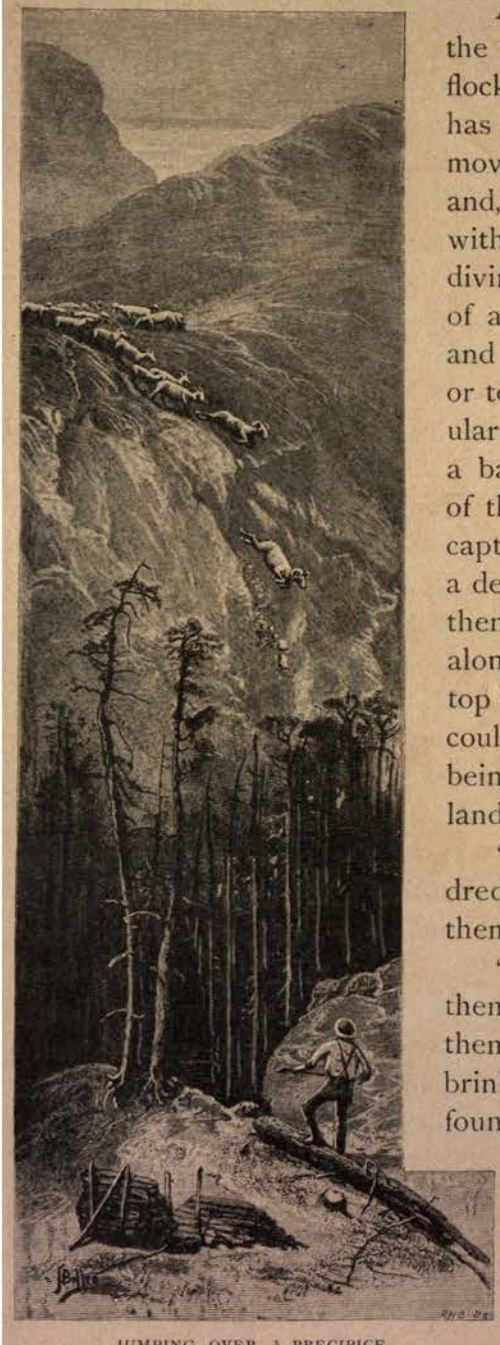
pines. In the distance were lofty peaks dipping into the azure, and in the middle-ground was the snowy fall, the voice and soul of the landscape; fringing bushes beating time to its thunder-tones, the brave sheep in front of it; their gray forms slightly obscured in the spray, yet standing out in good heavy relief against the close white water,—their huge horns rising and curving in the midst like the upturned roots of dead pine-trees, while the evening sunbeams streaming up the cañon gilded and glorified all. After crossing the river, the dauntless climbers, led on by their chief, at once began to scale the cañon wall, turning now right, now left, in long, single file, keeping well apart out of one another's way, and leaping in regular succession from crag to crag, now ascending slippery dome-curves, now walking leisurely along the edges of precipices, stopping, at times, to gaze down at me from some flat-topped rock, with heads held aslant, as if curious to learn what I thought about it, or whether I was likely to follow them. After reaching the top of the wall, which, at this place, is somewhere between one thousand five hundred and two thousand feet high, they were still visible against the sky as they lingered, looking down in groups of two or three, giving rare animation to the wilderness.

Throughout the entire ascent they did not make a single awkward step, or an unsuccessful effort of any kind. I have frequently seen tame sheep in mountains jump upon a sloping rock-surface, hold on tremulously a few seconds, and fall back baffled and irresolute. But in the most trying situations, where the slightest want or inaccuracy would have resulted in destruction, these always seemed to move in comfortable reliance on their strength and skill, the limits of which they never appeared to know. Moreover, each one of the flock, while following the guidance of the most experienced, yet climbed with intelligent independence as a perfect individual, capable of separate existence whenever it should wish or be compelled to withdraw from the little clan. The domestic sheep, on the contrary, is only a fraction of an animal, a whole flock being required to form an individual, just as numerous florets are required to make one complete sunflower.

Those shepherds who, in summer, drive their flocks to the mountain pastures, and, while watching them night and day, have seen them torn to pieces by bears, disintegrated by storms, and scattered

diverse like wind-driven chaff, will, in some measure, be able to appreciate the self-reliance and strength and noble individuality of nature's sheep.

Like the Alp-climbing ibex of Europe, our mountaineer is said to plunge headlong down the faces of sheer precipices and alight on his big horns. I know only two hunters who claim to have actually witnessed this feat. I never was so fortunate. They describe the act as a diving head-foremost. The horns are so large at the base that they cover all the upper portion of the head down nearly to a level with the eyes, and the skull is exceedingly strong. I struck an old, bleached specimen on Mount Ritter a dozen blows with my ice-axe without breaking it. Such skulls would not fracture very readily by the wildest rock-diving, but other bones could hardly be expected to hold together in such a performance; and the mechanical difficulties in the way of controlling their movements, after striking upon an irregular surface, are, in themselves, sufficient to show this bowlder-like method of progression to be impossible, even in the absence of all other evidence on the subject; moreover, the ewes follow wherever the rams may lead, and their horns are mere spikes. I have found many pairs of horns considerably battered—a result, most likely, of fighting, though, when a great leap is made, they may possibly seek to lighten the shock by striking their heads against anything that may chance to be favorably situated for the purpose, just as men mountaineers do with their hands. I have been interested in the question, after witnessing the performances of the San Joaquin band upon the glaciated rocks at the foot of the falls, and as soon as I procured specimens and examined their feet, all the mystery disappeared. The secret, considered in connection with exceptionally strong muscles, is simply this: the wide posterior portion of the bottom of the foot, instead of wearing down and becoming flat and hard, like the feet of tame sheep and horses, bulges out in a soft, rubber-like pad or cushion, which not only grips and holds well on smooth rocks, but fits in small cavities, and down upon or against slight protuberances. Even the hardest portions of the edge of the hoof are comparatively soft and elastic; furthermore, the toes admit of an extraordinary amount of both lateral and vertical motion, allowing the foot to accommodate itself still more perfectly to the irregularities of rock surfaces, and at the same time increasing the gripping power.



JUMPING OVER A PRECIPICE.

At the base of Sheep Rock, one of the winter strongholds of the Shasta flocks, there lives a stock-raiser who has the advantage of observing the movements of wild sheep every winter; and, in the course of a conversation with him on the subject of their diving habits, he pointed to the front of a lava headland about a hundred and fifty feet high which is only eight or ten degrees out of the perpendicular. "There," said he, "I followed a band of them fellows to the back of that rock yonder, and expected to capture them all, for I thought I had a dead thing on them. I got behind them on a narrow bench that runs along the face of the wall near the top and comes to an end where they couldn't get away without falling and being killed; but they jumped off and landed all right.

"What!" said I, "jumped a hundred and fifty feet! Did you see them do it?"

"No," he replied, "I didn't see them going down, for I was behind them; but I saw them go off over the brink, and then I went below and found their tracks where they struck on the loose *débris* at the bottom. They *sailed right off*, and landed on their feet right side up. That's the kind of animal *they* is—beats anything else that goes on four legs."

On another occasion, a flock that was pursued by hunters retreated to another portion of this same cliff where it is still higher,

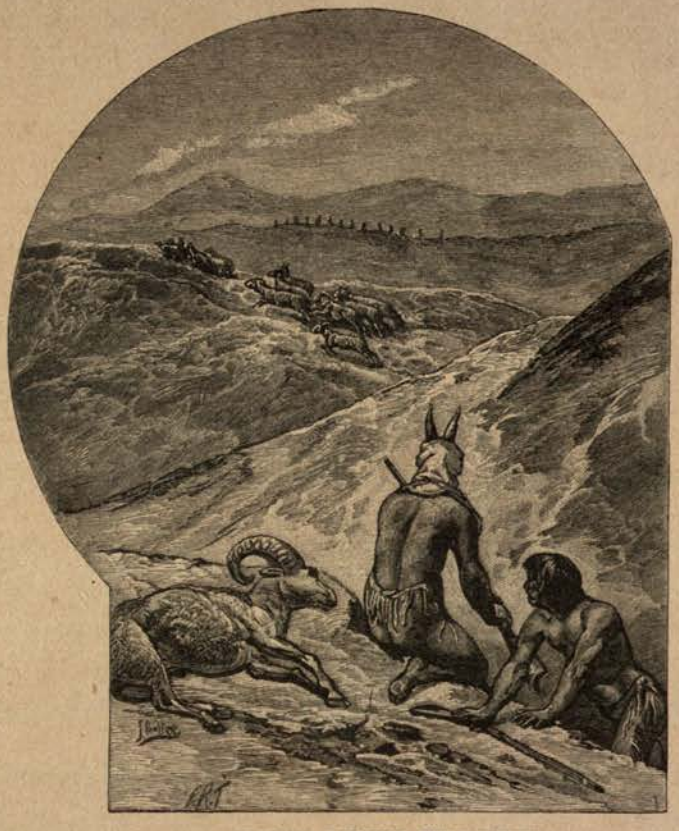
and, on being followed, they were seen jumping down in perfect order, one behind another, by two men who happened to be chopping where they had a fair view of them and could watch their progress from top to bottom. Both ewes and rams made the frightful descent without evincing any extraordinary concern, hugging close to the rock, and controlling the velocity of their half falling, half leaping movements by striking at short intervals and holding back with their cushioned, rubber feet upon small ledges and roughened inclines until near the bottom, when they "sailed off" into the free air and alighted on their feet, but with their bodies so nearly in a vertical position that they appeared to be diving.

It appears, therefore, that the methods of this wild mountaineering become clearly comprehensible as soon as we make ourselves acquainted with the rocks, and the kind of feet and muscles brought to bear upon them.

The Modoc and Pah Ute Indians are, or, rather, have been, the most successful hunters of the wild sheep. Great numbers of heads and horns belonging to animals killed by them are found accumulated in the caves of the lava-beds and Mount Shasta, and in the upper cañons of the Alps opposite Owens Valley, while the heavy obsidian arrowheads found on some of the highest peaks show that this warfare has long been going on.

In the more accessible ranges that stretch across the desert regions of western Utah and Nevada, considerable numbers of Indians used to hunt in company like packs of wolves, and being perfectly acquainted with the topography of their hunting-grounds, and with the habits and instincts of the game, they were pretty successful. On the tops of nearly every one of the Nevada mountains that I have visited, I found small, nest-like inclosures built of stones, in which, as I afterward learned, one or more Indians lay in wait while their companions scoured the ridges below, knowing that the alarmed sheep would surely run to the summit, and when they could be made to approach with the wind they were shot and killed at short range.

Still larger bands of Indians used to make grand hunts upon some dominant mountain much frequented by the sheep, such as Mount Grant, on the Wassuck Range to the west of Walker Lake. On some particular spot favorably situated with reference to the



INDIANS HUNTING WILD SHEEP.

well-known trails of the sheep, they built a high-walled corral, with long guiding wings, diverging from the gate-way; and into this inclosure they sometimes succeeded in driving the noble game. Great numbers of Indians were, of course, required—more, indeed, than they could usually muster, counting in squaws, children and all; they were compelled, therefore, to build rows of dummy hunters out of stones, along the ridge-tops they wished to prevent the sheep from crossing. And, without bringing any discredit upon the sagacity of the game, these dummies are found effective; for, with a few live Indians moving about excitedly among them, they can hardly be distinguished at a little distance from men, by any one not in the secret. The whole ridge-top then seems to be alive with hunters.

The only animal that may fairly be regarded as a companion of our sheep is the so-called Rocky Mountain goat (*Aplocerus Mon-*

tana, Rich.), which, as its name indicates, is more antelope than goat. He, too, is a brave and hardy climber, fearlessly accompanying the sheep on the wildest summits, and braving with him the severest storms; but smaller and much less dignified in demeanor. His jet-black horns are only about five or six inches in length, and the long white hair with which he is covered must obscure the expression of his limbs. I have never yet seen a living specimen of this American chamois, although a few bands, it is said, have been found in the Sierra. In some portions of the Rocky and Cascade mountains it occurs in flocks of considerable size, where it is eagerly pursued by the Indians, who make use of its skin in various ways as clothing, that of the head with the horns attached being sometimes worn as a cap.

Three species of deer are found in California—the black-tailed, white-tailed, and mule-deer. The first mentioned (*Cervus Columbianus*) is by far the most abundant, and occasionally meets the sheep during the summer on high glacier meadows and along the edge of the timber-line; but, being a forest animal, seeking shelter and rearing its young in dense thickets, it seldom visits the wild sheep in its higher homes. The antelope, though not a mountaineer, is occasionally met in winter by the sheep while feeding along the edges of the sage-plains and bare volcanic hills to the east of the Sierra. So also is the mule-deer, which is almost restricted in its range to this eastern region. The white-tailed species belongs to the coast-ranges.

Perhaps no wild animal in the world is without enemies, but highlanders, as a class, have fewer than lowlanders. The wily panther, slipping and crouching among long grass and bushes, pounces upon the antelope and deer, but seldom crosses the bald, craggy thresholds of the sheep. Neither can the bears be regarded as enemies; for though they seek to vary their every-day diet of nuts and berries by an occasional meal of mutton, they prefer to hunt tame and helpless flocks. Eagles and coyotes, no doubt, capture an unprotected lamb at times, or some unfortunate beset in deep, soft snow, but these cases are little more than accidents. So also a few perish in long-continued snow-storms, though in all my mountaineering I have not found more than five or six that seemed to have met their fate in this way. A little band of three were discovered

snow-bound in Bloody Cañon a few years ago, and were killed with an axe by some travelers who chanced to be crossing the range in winter.

Man, being the most powerful, is the most dangerous enemy of all, but even from him our brave mountain dweller has little to fear in the remote solitudes of the Alps. The golden plains of the Sacramento and San Joaquin were lately thronged with bands of elk and antelope, but, being fertile and accessible, they were required for human pastures. So also are the magnificent feeding-grounds of the deer—hill, valley, forest, and meadow; but it will be long ere man will care to take the highland castles of the sheep. And when we consider here how rapidly entire species of noble animals, such as the elk, moose, and buffalo, are being pushed to the very verge of extinction, all lovers of wildness will rejoice with me in the rocky security of *Ovis Montana*, the bravest inhabitant of the California Alps.

THE ANTELOPE.

By GEORGE BIRD GRINNELL, Ph. D.

THE prong-horn antelope is the fleetest of North American mammals. Its every movement is full of a lightness and ease which compel admiration, and even when at rest it is beautifully and gracefully statuesque. It is a goodly sight to watch an old buck as he stands outlined against the horizon on the top of some high bluff. His legs are slim and delicate, while his round, short body tells of strength and endurance. The proudly arched neck supports a fine pointed head, and the smoothly curving black horns stand out silhouette-like against the blue of the unclouded sky. Nearer at hand are some tiny kids, not very far from their gravely sedate mothers. They walk lightly about over the prairie and daintily pluck the grass or sometimes run sportive races with each other. Their little hoofs scarcely touch the ground, and when they move hither and thither, they seem to float over the earth rather than to tread upon it. They are the very embodiment of lightness and grace, and are withal so playful and merry-hearted that it seems like murder to take their lives. Yet they are quick to catch the alarm, and if the old buck on the hill above should sound his call of warning, the little company would dart away with the speed of the wind—soon to be far from the threatened danger.

The prong-horn antelope occupies a unique position among the horned ruminants. Belonging to that subdivision of the group styled *Cavicornia*,* it yet sheds its horns annually. As has been

* For some remarks on this subdivision of the ruminants, see the chapter on The North American *Cervidæ* in this volume.

already explained, the horns of North American ruminants are of two kinds: solid, like those of the deer, and hollow, like those of the ox. To this latter class belong those of the antelope, but with this modification, that the horny epidermic sheath which incloses them is not, as is the case with all other hollow-horned ruminants, a permanent covering. The zoölogist knows that scales, feathers, hair, claws, hoofs, and horns are but modifications of the epidermis, and grade into one another in such a way that it is often impossible to decide at what point one form of covering ends and another begins. The sheath of the antelope's horn is one form of dermal outgrowth. Chemically, there is scarcely any difference between it and the hair, and to all intents and purposes it is composed of hairs agglutinated together. Herein lies the fundamental difference between the shedding of the deer's antlers and that of the antelope's horns. The deer loses a bony outgrowth—a portion of the skeleton; while the antelope parts with a dermal outgrowth—a portion of the integument.

When the antelope sheds its horns, therefore, they do not drop off close to the skull, leaving the head bare like a deer's under the same circumstances, but the sheath falls off from the core, which is now tipped with a new horn, and clothed elsewhere with a thick hairy skin, which before long becomes hard black horn. The adult male antelope is therefore never entirely without horns. The sheath is lost in November or December after the rutting season is over.

Another remarkable characteristic of the antelope is the absence of the supplementary hoofs, or "dew-claws," which represent the second and fifth digits of the foot. These are present in all the other *Pecora* except the giraffes.

From the combination of anomalous characters found in this species, it has been considered with great interest by naturalists, and a very high authority has separated it from the true antelopes and placed it in a family *(Antilocapridæ)* by itself, thus making the single genus and species *(Antilocapra Americana Ord)* the equivalent in zoölogical rank of so important a family as the *Bovidæ*.

The prong-horn antelope stands nearly three feet high at the withers, and is from four and one-half to five feet in length. Its body is short and stout, head long and slim, neck rather short and

usually arched, and legs slender. The eye is very large and set high up on the head, immediately beneath the base of the horn. The antelope is reddish-yellow above and white below. The face up to the horns, an irregularly oval patch at the angle of the jaw, and a line down the back of the neck are blackish-brown. The sides and lower portion of the head, several irregular cross-bars on the front of the neck, the lower flanks, a large triangular white patch on the rump, and the entire under parts and legs, are white. The hoofs and horns are always black. The latter vary somewhat in form. Near the base they are long oval in cross section, the diameter from before backward being two or three times greater than that from side to side. They rise from just above the eye slightly forward and outward, and are sometimes sixteen inches long, though usually less than twelve. The shaft is scimeter shaped, the tip curving sharply so that it is usually directed somewhat downward, but the continuity of the anterior outline is broken by the "prong," which springs from a point about half way between the base and the tip, as a triangular stub, with its point directed inward, forward, and upward. The tips are usually directed backward, or else turn inward so as nearly to meet. Occasionally, a specimen is seen in which one tip is directed in and one backward, and in a pair of horns now in my possession both tips are twisted so as to point forward and downward. While the horns usually rise straight from the head, only spreading very slightly, they are sometimes directed almost away from each other, like the horns of an ox, and on rare occasions a buck may be seen with one horn growing down over his face, in the style of "the cow with the crumpled horn." Twice I have killed bucks with four horns, the extra ones being three or four inches long and attached loosely to the skin behind the normal horns. The female antelope is usually hornless, but a certain proportion of the does have small cylindrical horns, from one to three inches long, and without the prong.

The hair of the antelope is peculiar, being coarse, spongy, and brittle, and so loosely attached to the skin that it is easily pulled off in handling. There is also an under-coat of fine wool, which is especially noticeable in spring when the coat is being shed. This species is provided with a number of glands in the skin, and these exhale a strong and disagreeable odor, which pervades the whole

skin and hair. From this odor the antelope was formerly called "goat," cabree, and cabrit; but these names are obsolete. Prong-horn is its book name.

The antelope was formerly found all over the plains and among the mountains of the west, wherever the country was adapted to it, from latitude 53 N. south into Mexico, and from about the meridian of 95 west longitude to the Pacific Ocean. There is no evidence to show that it ever ranged east of the Mississippi River. All through the great region indicated it was once abundant, and was equally at home on the flat prairies of the Platte River bottom, the broken bad lands of Dakota and Montana, or among the rugged foot-hills, sage-brush plateaus, and bald mountain slopes of the main range. It is essentially a dweller in the open country and is never found far back in the forests. What it requires, above all things, is a place from which it can overlook all its surroundings; for, although the antelope's powers of scent are very keen, it depends chiefly upon its eyes for warning of impending danger. Still, it is not true, as has been asserted by most writers on this species, that it has a great terror of forests and is never found among them. In the Rocky Mountains, I have frequently seen antelope feeding among the timber in open pine forests, as well as where there was under-growth, and in North Park, Colorado, where a few years ago this species was to be found in great abundance, I have seen them by hundreds feeding in the bottom of Michigan Creek among thick willows, which were there from twenty to thirty feet high. In such situations they may be easily approached. It has been my experience, however, that if they are once alarmed, it is impossible to drive antelope into the timber. During the summer they are fond of feeding high up in the mountains in the little grassy, park-like valleys which open into one another and become constantly smaller toward the higher ground, being thus often nearly or quite surrounded by thick forest. I have sometimes, on entering such a little park by the only opening into it, come upon a band of antelope, and seen them rush across the open, and then, as they approached the timber, turn and run around the whole circumference of the meadow, and at length, as if in desperation, turn again and run toward and by me, and out of the little opening, so close that I could have thrown a rope over any one of the band.

The rutting season of the antelope begins in September and lasts nearly to the end of October. They are not always found in pairs at this season, though usually only a few are seen together, and these companies are likely to consist of individuals of the same sex. Just before and during the rutting season the bucks fight with considerable energy, though I have never seen anything quite like the description of their battles given by Audubon and Bachman. When two males meet, they come together head on and push vigorously, but no great amount of damage seems to result from such contests. On the other hand, an attack is often made by one buck on another without any warning. Such an assault I once witnessed late in September. Two bucks were following three or four does and kids, and walking quite near together, when suddenly the smaller of the two charged the other, striking him a terrible blow in the flank with his horns, and almost knocking him down. The large buck at once lowered his head and darted at his assailant, which, without any attempt at defense, took to his heels and ran like the wind for at least a mile, the other pursuing for half the distance. Both then slowly returned to the neighborhood of the females, and after a little while, when the small buck found another good opportunity, he repeated the attack, exactly in the same manner, and was again chased away. By the time that the two had again returned to the does, the band had passed over some high bluffs and out of my sight. The larger bucks frequently chase the smaller ones away; but this does little good, as they immediately return again. Soon after the close of the rutting season, a partial migration takes place. The antelope which, during the summer, have inhabited the higher mountain valleys now move down to the lower lands, and there is in all localities more or less shifting about at the approach of severe weather. During the winter they collect in great bands, sometimes numbering several thousand individuals. At the approach of spring, these large herds break up into small companies, and scatter over their summer grazing grounds.

Toward the last of May, the does are found singly upon the prairie. The kids are born in June and are two in number. For a week or more they are not at all disposed to trust to their legs for safety, but hide in the low grass or among the sage brush, and at this time can be approached and caught in the hands without diffi-

culty, although a little later they can run fast and far. When captured they become tame at once and are easily reared on cow's milk. They are interesting, but rather inconvenient, pets; for they are so much at home about a house as to be rather in the way. At birth, the hair is crimped, almost curly, and they are brownish-gray in color, with very little white upon them, and are chiefly remarkable for the excessive length of their legs, on which they seem to have some difficulty in balancing themselves. Their color soon changes to that of the adults, but is everywhere of a paler cast.

The cry of the antelope is a bleat, shorter than that of a goat and not so sharp; but this sound is scarcely ever heard by the hunter. When curious and somewhat suspicious they utter a sharp snort, pitched in a higher key than that of a deer; and when suddenly frightened, the bucks often communicate the alarm to their companions by a sharp nasal call, best represented by the syllables *bock-bock-bock*, rapidly repeated.

After man, the worst enemy of the antelope is the wolf. The gray wolf, no doubt, kills a great many; but the coyote is the most destructive. The latter captures the young fawns soon after birth, his keen nose enabling him to detect them in their hiding-places. This discovered, he soon makes a meal of the tender morsel, provided the mother be not near by. If she is at hand, and the coyote is alone, she will beat him off. Most of the antelope which the prairie wolves secure, however, are run down. Three or four coyotes will start one, a single wolf pressing it hard and forcing the pace as much as possible, while the others lope along on either side of the line of flight, choosing the easiest ground, and saving themselves as much as possible by taking short cuts, when the chase circles. As soon as the immediate pursuer becomes tired, his place is taken by another which is comparatively fresh; and so the pursuit is kept up, the wolves relieving each other from time to time, until the poor antelope is overtaken, pulled down, and torn to pieces. Sometimes, however, they escape out of the very jaws of their pursuers, for I have occasionally killed individuals which had, several days before, been more or less torn about the legs and flanks by the teeth of the savage brutes. The golden eagle kills many wounded antelope and some kids, but is sometimes beaten off by the latter, as shown by an account of a battle witnessed by my friend, Mr. W.

H. Reed, in October, 1882, near Como, Wyoming Territory, and communicated to the "Forest and Stream." He says:

"Thursday, the 26th of this month, I saw a strange battle between two kid antelope and an eagle. The antelope, when first seen by myself and Mr. Carlin, were running in our direction, and above them, about one hundred feet, was a large golden eagle, which made a swoop down at the antelope. When the bird did this, one of the kids stopped, turned round and reared on its hind legs and beat the air with its fore-feet, and the bird of prey rose high in air, only to make another dash, with the same result. This was repeated at least a dozen times, when the eagle, seeming to become tired, flew away and settled himself on a rock, and the antelope trotted away to join a large band on a near hill-side."

Civilized man has proved himself the antelope's worst enemy, and in those districts where hunters are numerous, this species soon disappears. The traveler kills it for food, the skin-hunter for the few cents its hide will bring, the sportsman for its head, the cow-boy to try his six-shooter, and everybody for "fun." Not one man in a hundred can resist the temptation to shoot at the beautiful and graceful animal which chance or its curiosity brings within range of his rifle. That his wagon is already loaded with meat, that he cannot possibly utilize what he kills, makes no difference to him. He must try to slaughter as long as there is game in sight.

To become a successful antelope hunter, it is more necessary that one should understand the habits of his game than that he should be a good shot. During the middle of the day, the antelope are usually lying down in places where they can have a wide outlook, and they are then most difficult to approach. For these resting-places, they select either a knoll in the midst of a broad valley or else the top of a bluff, or, perhaps, the middle slope of a wide, smooth hill-side, so that their gaze can cover all the country about them. The best time for hunting them is in the morning or evening, when they are scattered about on the hill-sides and in the little valleys, feeding. At such times they are most easily approached, and the hunter takes advantage of the inequalities of the ground to discover their presence in time to successfully stalk them. The essential point is that he should see the antelope before they descry him, for if their suspicions are once aroused, it is almost hopeless to attempt to get within shot of them. As soon as one of these wary creatures sees an object about which he feels doubtful, he takes a long, patient stare at it, and unless sat-

isfied that it is something usual and harmless, runs to the top of the nearest hill, and from that point again scrutinizes it. If now the object passes out of sight behind any cover, the antelope at once shifts his position to the top of another hill. But in localities where they have been much hunted, the sight of a mounted man, even at a great distance, is enough to set the antelope in motion, and they run off at once without waiting to inspect him. The sight of one running band alarms all those in the neighborhood, and they all move off to points from which they can obtain a good outlook.

In hunting large game, of whatever kind, caution and patience are prime requisites for success; and in the pursuit of no species are these more necessary than with the antelope. It is so constantly on the alert, and its eyesight is so keen, that all the hunter's care is needed to enable him to beat it with its own weapons and on its own ground. When hunting antelope, therefore, it is important to go slowly, and to look over the ground in front of you very carefully before showing yourself. When you approach the crest of a hill, do not ride your horse quite up to the top of it, but stop him before reaching the summit, dismount, and drop the lariat; or, if he is broken in the usual plains fashion, throw the bridle-rein over his head, and walk carefully to the top. As you approach it, move slowly. Do not raise your head and shoulders at once to look over the ridge, for there may be a band of antelope within a few yards of you. Take off your hat, for its crown is several inches above your eyes, and can therefore be seen before you yourself can see. Raise your head very gradually, and as it rises keep the eyes moving from side to side, so as to take in all the ground on either side of, and beyond, as well as immediately in front of you. If you should see the game, do not duck down your head at once, unless you are positive that the animals have not observed you, but lower it with the same slow motion. A sudden movement is very likely to attract attention, while a slow one will be almost sure to escape notice. If your game is within range, you will of course take your shot as soon as you please, but it may be at some distance, and in such a situation that by taking advantage of some ravine, or hill, or depression in the prairie, you can creep up close enough to shoot. To do this you may have to make a long detour before reaching the desired point. In such a case, notice carefully the lay of the land and

the position of the game, for from a different point of view the bluffs and landmarks may look so differently that you may have to look a long time for the animals, and while doing so may expose yourself to their view. Remember to watch the wind, for the antelope's nose is a good one and will tell him of your presence if you come between him and the breeze. Perhaps the band may be at a distance, and there may appear no way of approaching it. In this case, it will be worth your while to sit down and wait a little, to see if they will not feed up nearer to you, and so give you a shot. Do not be too anxious to know just what they are doing. Every time you raise your head above the bluff, some one of the animals will be likely to see it, and, unless they are frightened by you, they are not likely to make any sudden movement. Do not be too impatient to get your shot. Deliberation will serve you well. When you shoot, aim close behind the fore shoulder and just about where the white and the red meet; for the antelope's heart lies low, and, if you hold true, you will have meat in camp that night.

In hunting antelope, it is best always to travel upon the higher ground, since the game is much less likely to see an object above than below or on the same level with it. Keep to the ridges, therefore, and as you surmount each one, scan all the ground with care before you show yourself. There may be an antelope lying down behind some little rise of ground very near you; or perhaps a red back or the black tips of a pair of horns may be just visible over the edge of some ravine, and may at first escape your eye, if you are in a hurry.

Although, where antelope have been much hunted, the sight of a man, even if a long way off, will cause them to run, there are other localities where they are so tame as to permit one to ride within three or four hundred yards without manifesting much uneasiness. In such cases, the animals are curious rather than timid, and will sometimes run toward the hunter; and if he throws himself flat on the ground, they may approach within one hundred yards, or even nearer. This only takes place when they have been but little hunted. In a buffalo country, or where there are cattle, they are sometimes very unsuspicious. The old bucks ordinarily manifest more curiosity than the does, but with it is mingled an astonishing amount of shrewdness, and many instances of their cunning might be

related. The yearling bucks are possessed of this same spirit of investigation, but are wholly without the wisdom of their seniors, and thus often fall an easy prey to the hunter, frequently walking up to within shooting distance, and standing there stamping and snorting, until a rifle-ball satisfies their curiosity.

Antelope are often hunted with greyhounds, and this is a most noble sport. To practice it successfully, dogs of unusual power and endurance are required, as well as horses of great speed, for the pleasure of the chase is lost unless the hunter keeps the game in view. When I have seen them used, the Scotch staghounds have not proved fleet enough to overtake the antelope, and the most successful dogs have been large, smooth greyhounds.

Within the past ten years, the antelope have been exterminated in many localities where they were once abundant. The West is now filling up more rapidly than ever before, and with the advance of the settlements comes, in one district after another, the extinction of the antelope. Already along the line of the Union Pacific Railroad they have been driven from the Missouri River to the borders of Wyoming Territory; and, as the farmer breaks up the prairie, the stockman scatters his cattle, and the shepherd leads his flocks into regions hitherto unoccupied, the antelope must retreat before their advance, and seek for himself some feeding-ground where man has not yet penetrated. Such a feeding-ground he will seek in vain. The shrill whistle of the locomotive, quivering over the wide prairie or waking the echoes of the once silent mountain valleys, has sounded the death-knell of large game in the West.

A MUSK-OX HUNT

By FREDERICK SCHWATKA.

FOR about twelve months, during 1879 and '80, I was traveling by sledge in the arctic regions with a party of twenty persons. During that time, we depended for our food, as well as for that of our forty-two dogs, upon the game of the country, twice traversed by us, stretching from the waters of North Hudson's Bay to the Arctic Ocean. The design of subsisting for so long a time upon the game of those bleak, dreary regions entailed a great variety of hunting adventures. And to describe one of the incidents of a hunt after musk-oxen, or musk-sheep as they are sometimes called, is the object of this article.

Our route led us from the northernmost point of Hudson's Bay directly to the nearest available point on Back's Great Fish River, which empties into the Arctic Ocean just south of the large island known as King William's Land, on which island and adjacent mainland Sir John Franklin's party of over a hundred British seamen perished in 1848–49, and whose sad fate it was the object of this expedition, as far as possible, to determine. This route lay directly across country. The bulk of authorities on arctic sledging, both white and native, bore against long overland sledge journeys, an opinion to which they often gave practical illustration by unnecessary detours to follow salt-water ice or sinuous water-courses. Our course, therefore, had never been traveled by either white men or natives, and the latter, who formed an important element of the expedition, advised against it. The Indians of the north, as I found them, are loath to enter a totally unknown country. They knew almost nothing of the game of the region, so they said, but believed

that musk-oxen would be found, and if they proved to be plentiful they were willing to undertake the journey. Accordingly, a preliminary reconnaissance as far as Wager River was made by me in January, 1879, and although no musk-oxen were actually seen, we found abundant traces of them. These facts overcame the objections of the natives, who now readily assented to accompany us. Our party was well armed with the finest breech-loaders and magazine guns, and carried an ample supply of fixed ammunition. The hunting force of the party consisted of four full-grown Eskimo men, and three Eskimo boys, ranging from twelve to eighteen, and the four white men.

We left North Hudson's Bay on the first day of April, 1879, and, by the 8th of the month, were, according to our natives, in what they termed the musk-ox country, the locality in which they had been accustomed to hunt these huge monsters during winter trips from the sea-coast, where the natives live the greater part of the year. But the musk-cattle of the Arctic are so sparsely distributed that they form only a small part of the game necessary to furnish these northern nomads with their yearly supplies, and they place very little reliance upon them. The annual musk-ox hunt, however, is looked forward to with much interest, and is long in advance the burden of their conversation, while housed in their little snow huts. It is in the sport and excitement of the chase that they find the greatest reward, and not in the meat secured, nor in the half-worthless robes that are thus obtained. These robes are almost of no value to them unless they be near some trading station or whale-ships wintering in the ice. To us, however, their huge carcasses were, as food for our three teams of dogs, of great importance compared with that of the reindeer or any other game that we would be likely to fall in with.

On April 9th, we came upon a large trail of musk-cattle. The sign was tolerably old, some six or seven days at least; but one of the peculiarities of the animals is that they will travel very slowly when undisturbed and in good grazing country, and this same herd, so the Eskimo believed, was not far off. They tried to persuade me with all the vehemence of savage logic to remain a day or two in the vicinity and hunt them, but the larder was still too full to warrant any such delay, and we pushed on.

Again, on the 13th, we came upon the fresh trail of a large herd of these cattle, and I had the hardest work imaginable persuading these natives to pass on without following it up. The Eskimos have far more excitability in the presence of game or its sign than any other race of people I have encountered, not even excepting the various Indian tribes of our great western plains.

Before we had fairly gone into camp, on the 22d,—and by going into camp on an arctic sledge journey is meant the building of peculiarily constructed domes of snow, or snow-houses, the unharnessing of the dogs, et cetera,—a most furious gale of wind arose, which raged so terribly for five days that even the natives found it prudent not to stay out of the snow-huts for any considerable time; and this enforced idleness reduced our commissary to an alarming minimum. We managed, however, to get away by the 28th, the storm even then only slightly abating; and, after traveling nineteen miles in a north-north-west direction, we went into camp, the weather somewhat better, but the larder in a reduced condition. Shortly after camping, Ik-queé-sik, my Netschilluk Eskimo guide, who had absented himself while the *igloos*, or snow-houses, were being built, came running excitedly into the village from a distant high hill, the perspiration in huge drops streaming down his brown and dirty face, and with my army signal telescope, full drawn, under one arm. While gasping for breath, he reported that he had seen a herd of eight or ten musk-oxen about four or five miles to the northward, slowly grazing along to the west, and evidently unaware of danger. Everything was put aside, and every Eskimo, man, woman and child, was soon at the top of a high hill near by, and a dozen dirty and eager natives were clamoring to look through the telescope. We were not long in coming to the decision that the next day should be devoted to securing as many as possible of the long-haired monsters, Ik-queé-sik's discovery having been made too late to risk an attack so near night-fall.

Our dogs, that had been loosened from their harnesses, were now secured to the overturned sledges and to other heavy materials, to prevent their scampering after the game should they scent them in the night, as their ravenous appetites would undoubtedly prompt them to do; while around each animal's nose was closely wound a muzzle of seal or walrus line thongs, to prevent the usual concert of prolonged howls.

The following morning, a heavy drifting fog threatened to spoil our sport and lose us our coveted meat, but we managed to get away soon after eight o'clock, having a party of eleven rifles, with two Eskimo women, two light sledges, and all the dogs. At that hour the great thick clouds seemed to be lifting, but shortly after starting the fog settled down upon us again. After some two or three hours of wandering around in the drifting mist, guiding our movements as much as possible by the direction of the wind, which we had previously determined, we came plump upon the trail, apparently not over ten minutes old, of some six or seven of the animals. Great fears were entertained by the experienced hunters that the musk-oxen had heard our approach, and were now probably "doing their level best" to escape. The sledges were immediately stopped, and the dogs rapidly unhitched from them, from one to three or four being given to each of the eleven men and boys, white or native, that were present, who, taking their harnesses in their left hands or tying them in slip-nooses around their waists, started without delay upon the trail, leaving the two sledges and a few of the poorer dogs in charge of the Innuit women, who had come along for that purpose, and who would follow on the trail with the empty sledges as soon as firing was heard. The dogs, many of them old musk-ox hunters, and with appetites doubly sharpened by hard work and a constantly diminishing ration, tugged like mad at their seal-skin harness lines, as they half buried their eager noses in the tumbled snow of the trail, and hurried their attached human being along at a flying rate that threatened a broken limb or neck at each of the rough gorges and jutting precipices of the broken, stony hill-land where the exciting chase was going on. The rapidity with which an agile native hunter can run when thus attached to two or three excited dogs is astonishing. Whenever a steep valley was encountered, the Eskimos would slide down on their feet, in a sitting posture, throwing the loose snow to their sides like escaping steam from a hissing locomotive, until the bottom was reached, when, quick as thought, they would throw themselves at full length upon the snow, and the wild, excited brutes would drag them up the other side, where, regaining their feet, they would run on at a constantly accelerating gait, their guns in the meantime being held in the right hand or tightly lashed upon the back.

HEAD OF MUSK-COW.

DRAWN BY JAMES C. BEARD.

We had hardly gone a mile in this harum-scarum chase before it became evident that the musk-oxen were but a short distance ahead, on the keen run, and the foremost hunters began loosening their dogs to bring the oxen to bay as soon as possible; and then, for the first time, these intelligent creatures gave tongue in deep, long baying, as they shot forward like arrows and disappeared over the crests of the hills, amidst a perfect bewilderment of flying snow and fluttering harness traces. The discord of shouts and howlings told us plainly that some of the animals had been brought to bay not far distant, and we soon heard a rapid series of sharp reports from the breech-loaders and magazine guns of the advanced hunters. We white men arrived just in time to see the final struggle. The oxen presented a most formidable-looking appearance, with their rumps firmly wedged together, a complete circle of swaying horns presented to the front, with great blood-shot eyeballs glaring like red-hot shot amidst the escaping steam from their panting nostrils, and pawing and plunging at the circle of furious dogs that encompassed them. The rapid blazing of magazine guns right in their faces—so close, often, as to burn their long, shaggy hair—added to the striking scene. Woe to the overzealous dog that was unlucky enough to get his harness-line under the hoofs of a charging and infuriated musk-ox; for they will follow up a leash along the ground with a rapidity and certainty that would do credit to a tight-rope performer, and either paw the poor creature to death or fling him high in the air with their horns.

Although we tired and panting white men rested where the first victims fell, Too-loó-ah, my best hunter,—an agile, wiry young Iwillik Eskimo of about twenty-six, with the pluck and endurance of a blooded horse,—and half the dogs, pressed onward after the scattered remnants of the herd, and succeeded in killing two more after a hard run for three miles. The last one he would probably not have overtaken if the swiftest dog, Parseneuk, had not chased him to the edge of a steep precipice. Here a second's hesitation gave the dog a chance to fasten on the ox's heels, and the next moment Parseneuk was making an involuntary aerial ascent, which was hardly finished before Too-loó-ah had put three shots from his Winchester carbine into the brute's neck and head, whereupon the two animals came to earth together,—Parseneuk on the soft snow at the bottom of the twenty-

PARSENEUK IN A TIGHT PLACE.

foot precipice, fortunately unhurt. Parseneuk was a trim-built animal that I had secured from the Kinnepetoo Eskimo, who inhabit the shores of Chesterfield Inlet, being one of the very few tribes of the great Eskimo family, from the Straits of Belle Isle to those of Behring Sea, who live away from the sea-coasts. They subsist principally upon the flesh of the reindeer, and their dogs are adepts in hunting these fleet animals, Parseneuk being particularly swift and intelligent as a hunter. He had been the favorite in the Kinnepetoo family from whom he was purchased, and I had to appease several of them with presents, as indirect damages to their affections. He had a beautiful head, with sleek muzzle and fox-like nose, while his pointed ears peered cunningly forth in strange contrast with the many other dogs that I have met, whose broken and mutilated ears (usually restored in illustrations of arctic scenes) showed plainly the fights and quarrels in which they had figured. Parseneuk, as a favorite, had been raised and fed in the

igloo, under the fostering protection of the old squaw, and being saved the necessity of combating for his daily bread, thus preserved his ears.

The chase finished, the half-famished dogs received all they could eat,—their first full feast in over three weeks,—and after loading the two sledges with the remaining meat and a few of the finer robes as mementos and trophies, we returned to our morning's camp, a distance of five or six miles, which we traveled slowly enough, our over-fed dogs hardly noticing the most vigorous applications of the well-applied whip.

The Eskimos with whom I was brought in contact never hunt the musk-oxen without a plentiful supply of well-trained dogs, for with their help the hunters are almost certain of securing the whole herd, unless the animals are apprised of the approach, as they were in our encounter with them. When the flying herd has been brought to bay in their circle of defense by the dogs, the Eskimo hunters approach within five or six feet and make sure of every shot that is fired, as a wounded animal is somewhat dangerous and extremely liable to stampede the herd. A band of these brutes, when once stampeded, are much harder to bring to bay the second time; but it may be well to mention that, if the hunt is properly managed, such stampedes are extremely rare. When the circle of cattle is first approached, the hunters take care to dispatch first the active and aggressive bulls, conformably to a general hunting maxim followed in all parts of the world. As their members fall, one at a time, the musk-oxen persist in their singular mode of defense, presenting their ugly-looking horns toward as many points of the compass as their remaining numbers will allow. When but two only are left, these, with rumps together, will continue the unequal battle, and even the last "forlorn hope" will back up against the largest pile of his dead comrades, or against a large rock or snow-bank, and defy his pursuers, dogs and hunters, until his death. While the calves are too young and feeble to take their places in ranks, which, in general, is about the first eight or nine months of their existence, they occupy the interior space formed by the defensive circle; but when their elders have perished in their defense, with an instinct born of the species they will form in the same order and show fight.

ON THE TRAIL.

The calves are born about the month of May, in this portion of the country, and have the same dirty-brown, awkward, ugly-looking appearance as the buffalo calves of the plains. They can be readily captured alive by the Eskimo dogs, if the hunters are near enough to prevent their being immediately killed by these ravenous animals; but in these inhospitable regions, it is impossible to furnish them with proper nourishment to sustain life until they can be transferred to a vessel, which, moreover, can only escape from here during the autumn months; consequently, there are no cases on record, I believe, where these most curious animals have been exhibited in the

temperate zones. The natives told me they had kept calves alive for a few days, but they sank so rapidly they killed them for food.

Before the Eskimo hunters were provided with the fire-arms of civilization, procured in trade with the Hudson's Bay Company or American whale-ships, they used the bow and arrow or the lance, dashing fearlessly past the brutes as they buried the sharpened bone lance-head deep in some vital part. In the olden times, one of their tests of manly courage was for the hunter to pass within the circle of animals and return, backward and forward, killing one of the oxen at each passage. Of such feats, the old gray-haired men of the tribes still boast.

One old Iwillik Innuit—so I was told by his tribe, and they are not given to vain boasting,—while traveling with dogs and sledge from one village to another, during his younger days, came suddenly and unexpectedly upon a couple of musk-oxen that had strayed far from their usual haunts. Unhitching his dogs from the sledge, he soon brought the oxen to bay. His only weapon was a "snow-knife," a kind of long-bladed butcher-knife which they use to cut the blocks of snow in constructing heir houses of that material. Nothing daunted, however, he courageously attacked them, and in a few minutes had secured both.

The danger from these formidable and ferocious-looking brutes is undoubtedly more apparent than real, judging from the few accidents that occur. The dogs are frequently killed by being tossed in the air or pawed to death as already described. The musk-bulls are prevented from following up a dog's trailing harness-line by attaching a toggle noose where the trace joins the harness at the root of the dog's tail when the traces are separated from the dogs before they are slipped for the chase; also, a sure way is to fold the trace into a "bundle noose" until it rests on the dog's back. The trained Eskimo dog never barks in the presence of game until liberated from his master's hands.

The musk-ox of the Arctic is only about two-thirds the size of the bison, or American buffalo, but in appearance he is nearly as large, owing to his immense heavy coat of long hair that covers him down below the knees, as if he were carrying a load of black brush. As his generic name *(Ovibos moschatus)* imports, he seems to form a connection between the ox and the sheep. His peculiar covering

AT BAY.

makes him look like a huge ram, to which his horns add much of similarity. In fact, this covering partakes of the character of both wool and hair. First, there is a dense coat of blackish-brown hair like that on the hump, shoulders, and fore-legs of the buffalo, which extends over the whole body and is, I believe, never shed. Below this there is an undercoating of soft, light brown wool, which is shed annually, and which is invisible through the outer coat, unless parted by the hands. This seems to be a true wool and of the finest texture. A Mr. Pennant, an English gentleman, gives an instance of a man of his, by the name of Jeremy, having woven from this inner fleece of the musk-ox a pair of stockings which were as fine as any of the best silk stockings.

During the summer months, just after this fleece is shed, it is still found, matted into the long black hair, and is only prevented from falling to the ground by this interweaving process. The short hair on their foreheads is very often found matted into little balls or small lumps with ordinary dirt, showing unmistakably that they use their heads and horns in tearing up the earth. This they have been

seen to do when closely pressed and brought to bay; but they are so seldom hunted that we may suppose their head and horns are used in removing the snow from the mossy patches where they graze in the winter-time. Their horns, from their peculiar shape, would certainly make excellent snow shovels.

The shape of these weapons of defense is certainly most peculiar. Starting from the median line of the forehead, at which point the horns are joined base to base, they present a thick, flat plate, or shield, of corrugated horn almost a foot in width. As these flat shields circle around the eyes, about four inches from them, the outer edges are gradually incurvated until, about half way between the eyes and nostrils, a perfect horn is formed. From here it tapers, curling upward near its extremity with a jauntiness worthy of a Limerick hook. To the natives of the north, these horns afford many implements of the chase and household utensils. They thoroughly understand the well-known principle of steaming the horn in order to render it soft while it is being worked.

The native bow is usually made of two or three sections of musk-ox horn, tipped with the shorter horn of the reindeer, the whole being firmly lashed with braid made from the sinew on the superficial dorsal muscles of the reindeer, a cluster of these braids about as thick as a man's middle finger running the length of the back of the bow to give it strength and elasticity. I found the Eskimos of King William's Land and vicinity using copper stripped from Sir John Franklin's ships to rivet their bows together. The Eskimo bow is not in any way equal to the Indian bow, seldom being effective at over forty or fifty yards with such game as the reindeer. Except as children's playthings, bows have entirely disappeared, wherever intercourse with the Hudson's Bay Company or American whalers has placed fire-arms in the hands of the natives, and this includes the whole of the great Eskimo family (or Innuits, as they should be properly called), except those stretched along the shores of the Arctic Ocean from about King William's Land on the east to the farthest point reached by American whalers from the Pacific on the west.

A camp is always picked near a lake which the Eskimos know, by certain signs, has not yet frozen to the bottom. This fact is ascertained by placing their pug noses in close proximity to the

upper surface, when the peculiar hues indicate the presence or absence of water. While the most of the party are building their little huts of snow for the night's encampment, some one takes the ice-scoop and chisel and fares out on the lake and selects a place for his operations. He then digs a hole with the chisel about a foot in diameter, and nearly the same depth, by repeated vertical strokes, and when the chopped ice or débris thus formed commences choking this instrument, it is removed with the ice-scoop, and this alternation of cutting and removal is kept up until the water is reached, at from four to eight or ten feet below. This digging requires far more dexterity than one would at first glance suppose. The amateur finds it impossible to keep it from rapidly narrowing to a point long before the water is reached. Moreover, if the débris be too freely chopped it becomes reduced to a sort of ice-dust, which will pack in so firmly toward the finishing of the water-hole that the edge of the scoop cannot be wedged under it, with its limited play of action. The children and old women of the village may draw many a meal of goodly-sized salmon through this avenue, and this necessitates that the hole should be of fair size throughout. One of the most annoying events of my sledge journey was, after a long and unsuccessful attempt to catch something at one of these water-holes, to find myself suddenly at one, and a big salmon at the other, end of a strong fish-line, separated by an ice-hole through which neither could pass.

The range of musk-cattle is quite extensive. They occupy the extreme northern shores of Greenland on both the east and west coasts as far as they have been explored, and these two ranges are probably connected around the northernmost point of this great polar continent. They occur on both sides of Smith Sound, and in general frequent arctic America from latitude 60° to 79° north, and from longitude 67° 30′ west, almost to the Pacific coast. It is, however, in the great stretch of hilly country lying between North Hudson's Bay and its estuaries on the south and east, and the Arctic Ocean with its intricate channels on the north and west, that these animals are found in the largest herds and greatest numbers. Captain Hall, in his sledge journey from Repulse Bay to King William's Land, in 1869, killed 79 musk-oxen, whose hides alone weighed 873 pounds.

Dr. Rae, the celebrated Scotch explorer of this region of the Arctic, also secured large numbers of them. The musk-ox occurs fossilized at Escholtz Bay on the north-west coast, and fossil oxen found in different sections of the United States, and which closely resemble the musk-ox, have been described by Dr. Leidy in the Smithsonian Institution's reports. These were clothed in a long fleece, and roamed through the Mississippi Valley just before the great drift period. Fossil musk-oxen exist in Siberia and northern Europe; but their living descendants, of which one species is known, are now strictly confined to the arctic region of the Western continent.

The musk-ox derives its name from the peculiar odor which it emits, and which to a greater or less extent also pervades the meat of the animal. The younger animals, however, are much milder, and with the calves I have never been able to discern it at all. Much of this odor can be obviated by dressing the animal as soon as killed, especially if it is cold weather, and this rule may be said to be more or less general with all animals and birds having disagreeable odors peculiar to their kind.

I have said the robes are almost worthless to the natives except for purposes of traffic. They are sometimes used to spread on the snow-bed, as the first layer of skins, in order to protect the snow from the heat of the body; but even here they are not nearly so serviceable as the robe of the reindeer, owing to the facility with which the snow can be removed from the latter by a few strokes of a stick. The Ookjoolik, or Ooqueesik-Salik Eskimos of Hayes River, who are not armed, and consequently can procure but few reindeer (whose hide is the universal arctic clothing), often make long boot-leggings and gloves of musk-ox fur, and this gives them a peculiarly wild and savage appearance that contrasts strangely with other natives. The almost total absence of wood in their country—the little they get being obtained by barter with distant and more fortunate tribes—forces them to use the skin of the musk-ox for sledging in their country. The ears and fore-legs of the skin being lashed almost together, a sledge-like front is obtained, and the articles to be transported are loaded on the trailing body behind. Over lakes, rivers, and flat plains, it is equal to wood, but in very uneven ground its pliability is dangerous to fragile loads.

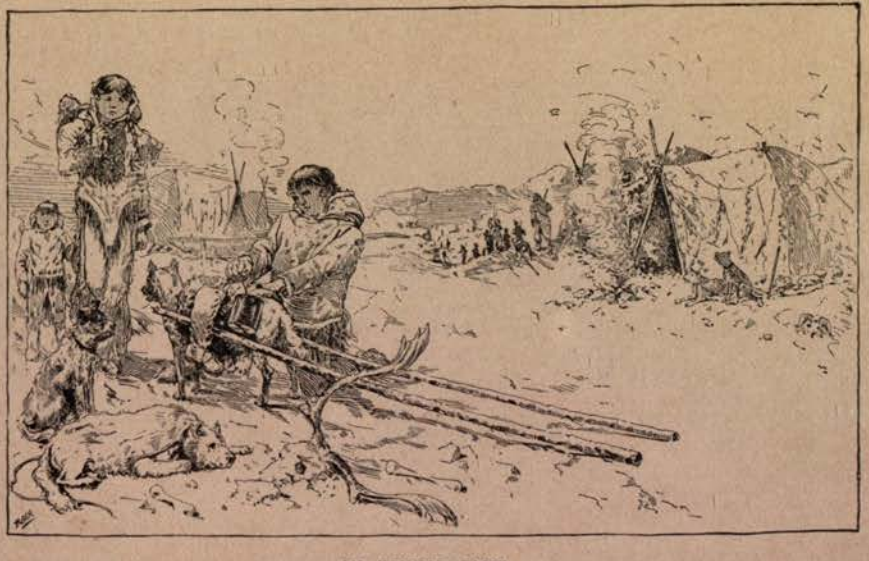
When closely pressed, the musk-oxen do not hesitate to throw themselves from the steepest and deepest precipices, and the natives speak of occasions where they have secured them in this manner without wasting powder or lead, finding them dead at the foot of the descent. Sir James Clarke Ross had a personal observation of this kind in one of his arctic expeditions.

McClintock once saw a cow on Melville Island, in the Parry archipelago, which was of a pure white color, an albino sort of deviation that is known to occur among the buffalo of the plains at rare intervals. She was, however, accompanied by a black calf. This Melville Island is abundantly peopled with these oxen, not less than one hundred and fourteen being shot within a year by the crews of two ships wintering there. When inhabiting islands, they do not seem to cross from one to another, as the reindeer constantly do when the channel is frozen over, and even confine their annual migrations to very limited areas. Different writers disagree as to whether they can be called migratory in the strict sense of the word. If white men are hunting them without dogs, they may station themselves about a herd, close in to seventy or eighty yards, and then, by picking off the restless ones first, so bewilder the remainder that, with fair luck, they may secure them all. There are several instances of such methods being tolerably successful. When the temperature reaches the extremes of the bitter winter weather, as from —60° to —70° Fahrenheit, the musk-oxen and reindeer herds can be located, at from six to seven miles distance, by the cloud of moisture which hangs over them, formed by their condensing breath, and from favorable heights at even fifteen to twenty miles. Even at these extreme distances, the native hunters claim that they can discern the difference between musk-oxen and reindeer by some varying peculiarities of their vapors.

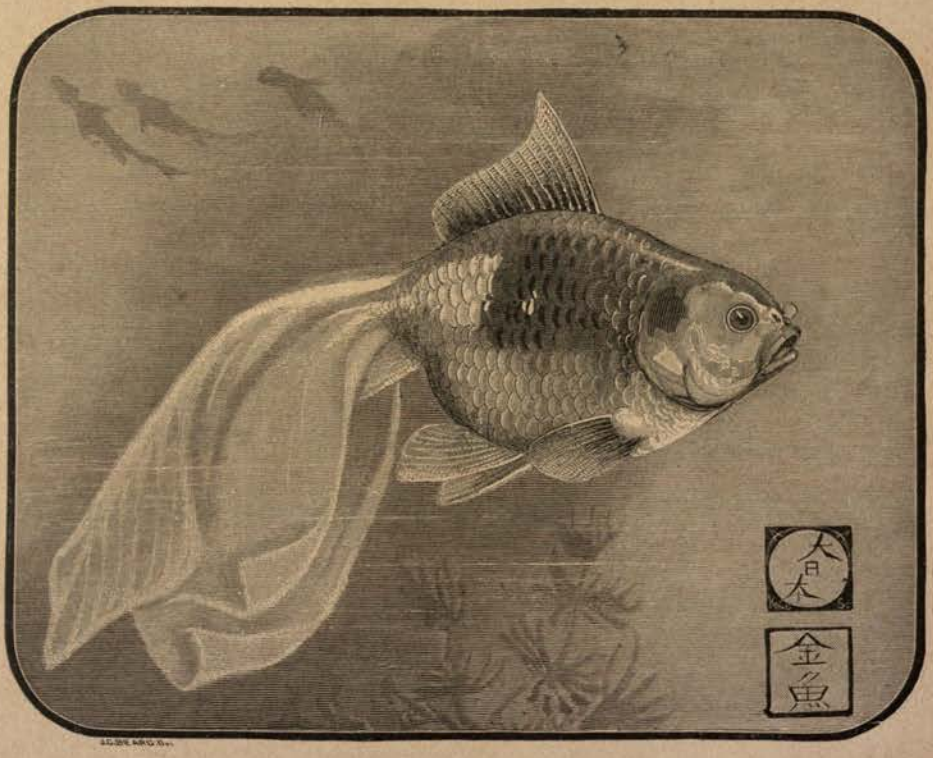
I remember being one of a party of six—five Innuits besides myself—that chased on a fresh trail of a small herd of musk-oxen from about nine o'clock in the morning until night-fall, which was four in the afternoon. We went at a gait which would be called a good round "dog-trot" for the whole time (except one small rest of five minutes). This is much easier than one would imagine, with a couple of dogs harnessed to you to tow you along; yet I confess I was completely fagged out, after this little run of not less than forty or

fifty miles, and in a fine condition to believe many stories of endurance while on hunting chases that I had heard them tell. The thermometer at camp registered 65° below zero, yet there was no suffering from the still cold during such exercise, and, in fact, at times, I felt uncomfortably warm.

One of their peculiarities which I have noticed is that when slightly wounded, if they have been knocked over upon their sides, they seem perfectly powerless to rise, either from fear or the peculiar formation of their legs. Two of the animals we shot on the 29th of April received each a broken shoulder and were knocked on their sides. The native men, women, and boys sat upon their heaving sides, evidently enjoying the cruel sport, and all the white men participated for a mere second, rather to please their savage allies, until I requested them to dispatch the brutes, which they did by a well-directed heart thrust with a snow-knife. My natives spoke of this occurrence as a rather common incident of the musk-ox battle-field.



AN ESKIMO CAMP.


大吉太
金魚

FISH

I shall stay him no longer than to wish him a rainy evening to read this following discourse; and that, if he be an honest angler, the east wind may never blow when he goes a fishing.

—Izaak Walton.

THE PRIMITIVE FISH-HOOK.

By BARNET PHILLIPS,

SECRETARY OF THE AMERICAN FISH CULTURAL ASSOCIATION.

I HAVE before me an illustrated catalogue of modern fish-hooks and angling implements, and in looking over its pages I find an *embarras de choix.* I have no need for rods, for mine, like well-kept violins, have rather improved by age. A lashing may be frayed, or a ferrule loose, but fifteen minutes' pleasant work will make my rods all right again. Lines are sound, for I have carefully stretched them after use. But my hooks! They are certainly the worse for wear. I began my season's fishing with a meager stock. Friends borrowed from me, and in replenishing my fly-book in an out-of-the-way place, the purchase was unsatisfactory. As I lost more than one fish from badly tempered or worse fashioned hooks, I recalled a delightful paper by Mr. Froude. Rod in hand, he was whipping some pleasant trout stream, near an historic site, the home of the Russells, and, breaking his hooks, commenced from that very moment to indulge in the gloomiest forebodings as to the future of England.

Fairly familiar with the general character of fishing-gear, either for business or amusement, I see in my book, Kirby, Limerick, Dublin, O'Shaughnessy, Kinsey, Carlisle, Harrison, Central Draught, as somewhat distant families of hooks, used for sea or river fishing, and from these main stocks there grow many varieties, with all conceivable twists, quirls, and crookednesses. I discard all trap-hooks, infernal machines working with springs, as only adapted for the capture of land animals. Somehow I remember an aggressive book, given to me at an early age, which, containing more than one

depressing passage, had one of extraordinary malevolence. This was couched nearly as follows: "Suppose you were translated only some seven hundred years back, then, pray, what would you be good for? Could you make gunpowder? You have, perhaps, a vague idea that sulphur, saltpeter, and charcoal are the component parts, but do you know where or how they are procured?" I forget whether this dispiriting author was not equally harrowing in regard to the youthful reader's turning off a spectroscope at a minute's notice, or wound up with the modest request that you should try your hand among the Crusaders with an aneroid barometer of your own special manufacture.

Still this question arises: Suppose you were famishing, though fish were plenty in a stream, and you had neither line nor hook, What would you do? Now, has a condition of this kind ever occurred? Yes, it has, and certainly thousands of times. Not so many years ago, the early surveyors of the Panama route suffered terrible privations from the want of fishing implements. The rains had rendered their powder worthless; they could not use their guns. Had they only been provided with hooks and lines, they could have subsisted on fish. Then there are circumstances under which it would be really necessary for a man to be somewhat of a Jack-of-all-trades, and to be able to fashion the implements he might require, and so this crabbed old book might, after all, act in the guise of a useful reminder. There was certainly a period, when every man was in a condition of comparative helplessness, when his existence depended on his proficiency in making such implements as would catch fish or kill animals. He must fashion hooks or something else to take fish with, or die.

Probably man, in the first stage of his existence, took much of his food from the water, although whether he did or not might depend upon locality. If on certain portions of the earth's surface there were stretches of land intersected by rivers, dotted by lakes, or bordering on the seas, the presence of shell-fish, the invertebrates or the vertebrates, cetaceans and fish, to the exclusion of land animals, might have rendered primitive man icthyophagous, or dependent for subsistence upon the art of fishing. But herein we grapple at once with that most abstruse of all problems, the procession of life. Still, it is natural to suppose, so far as the study of man goes, when con-

sidered in relation to his pursuits, that in the early dawn of humanity, mammals, birds, and fish must have been synchronous.

After brute instinct, which is imitativeness, then came shiftiness and adaptiveness. The rapid stride of civilization, considered in its material sense, is due solely to the use of such implements as are specially adapted for a particular kind of work. With primitive man, this could never have been the case. Tools of the Paleolithic or Neolithic age (which terms indicate stages of civilization, but are not chronological), whether they were axes, hammers, or arrows, must have served river-drift or cave-men for more than a single purpose. People with few tools do manage by skill alone to adapt these to a variety of ends. The Fijian and the Russian peasant, one with a stone adze, the other with a hatchet, bring to their trades the minimum of tools. The Kafir, with his assegai, fights his battles, kills cattle, carves his spoons, and shaves himself. It was only as man advanced that he devised special tools for different purposes.

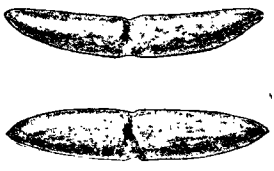
According to our present acquaintance with primitive habits, if man existed in the later Miocene age, and used a lance or spear for the killing of land animals, he probably employed the same weapons for the destruction of the creatures—possibly of gigantic form—inhabiting the seas, lakes, and rivers. The presence of harpoons made of bone, found in so many localities, belonging to a later period, may not in all cases point to the existence of animals, but to the presence of large fish.

Following, then, closely the advance of man, when his fishing implements are particularly considered, we are inclined to believe that he first used the spear for taking fish; next, the hook and line; and, lastly, the net. There might have been an intermediate stage between the spear and the hook, when the bow and arrow were used.

Interesting as is the whole subject of primitive fishing, we are, however, to occupy ourselves principally with the form of the primitive fish-hook. To-day there are some careful archæologists who are not willing to accept that particular form which is presented below. I believe, from the many reasons which can be advanced, that this simple form was the first device used by man in taking fish with a line. The argument I shall use is in some respects a novel one.

These illustrations, exactly copied as to size, represent a small

piece of dark, polished stone. It was found in the valley of the Somme, in France, and was dug out of a peat-bed twenty-two feet below the surface. The age of this peat-bed has been variously estimated. M. Boucher de Perthes thought that thirty thousand years must have elapsed since the lowest layer of peat was formed. The late Sir Charles Lyell and Sir John Lubbock, without too strict an adherence to date, believed that this peat-bed represented in its formation "that vast lapse of time which began with the commencement of the Neolithic period." Later authorities deem it not older than seven thousand years B. C.



STONE FISH-GORGE, FROM THE VALLEY OF THE SOMME. (NEW YORK MUSEUM OF NATURAL HISTORY.)

Wonderful changes have come to pass since this bit of polished stone was lost in what must have been a lake. Examining this piece of worked stone, which once belonged to a prehistoric man living in that valley, we find it fairly well polished, though the action of countless years has slightly "weathered" or disintegrated its once smooth surface. In the center, a groove has been cut, and the ends of the stone rise slightly from the middle. It is rather crescent-shaped. It must have been tied to a line, and this stone gorge was covered with a bait; the fish swallowed it, and, the gorge coming crosswise with the gullet, the fish was captured.

The evolution of any present form of implement from an older one is often more cleverly specious than logically conclusive; nevertheless, I believe that, in this case, starting with the crude fish-gorge, I can show, step by step, the complete sequence of the fish-hook, until it ends with the perfected hook of to-day. It can be insisted upon even that there is persistence of form in the descendants of this fish-gorge, for, as Professor Mitchell writes in his "Past in the Present," "an old art may long refuse to disappear wholly, even in the midst of conditions which seem to be necessarily fatal to its continued existence."

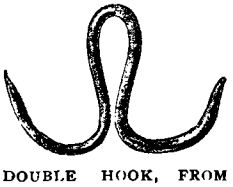
In the Swiss lakes are found the remains of the Lacustrine dwellers. Among the many implements discovered are fish-gorges made of bronze wire. When these forms are studied, the fact must be recognized at once that they follow, in shape and principle of construction, the stone gorges of the Neolithic period. Now, it is perfectly well known that the early bronze-worker invariably followed the stone

BRICOLE, FROM THE LAKE OF NEUFCHATEL.

patterns. The Lacustrine gorges have had the name of *bricole* given them. This is a faithful copy of a bronze bricole found in the Lake of Neufchatel. It is made of bronze wire, and is bent in the simplest way, with an open curve allowing the line to be fastened to it. The ends of the gorge are very slightly bent, but they were probably sharpened when first made.

BRICOLE OF A LATER PERIOD.

This bricole varies from the rather straight one found in the Lake of Neufchatel, and belongs to a later period. It is possible to imagine that the lake-dweller, according to his pleasure, made one or the other of these two forms of fishing implements. As the double hook required more bronze, and bronze at first was very precious, he might not have had material enough in the early period to make it. This device is, however, a clever one, for a fisherman of to-day who had lost his hook might imitate it with a bit of wire. Had any member of the hungry Isthmus party before mentioned known of this form of Lacustrine hook, he might have twisted some part of a suspender buckle, providing there were no thorny plants at hand, and have caught fish.

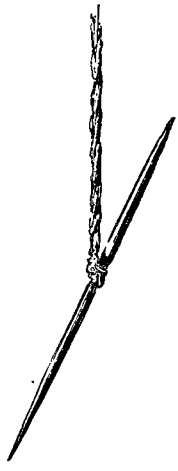


DOUBLE HOOK, FROM THE LAKE OF NEUFCHATEL. (IN THE COLLECTION OF PROF. A. M. MAYER.)

When we compare the four forms, showing only their outlines, the evolution of the fish-hook can be better appreciated. Returning to the stone fish-gorge, the work of the Neolithic period, it is evident that the man of that time followed the shape handed down to him by his ancestors; and as this fashioned stone from the valley of the Somme is of a most remote period, how much older must have been the Paleolithic fish-gorge of rough stone. It might have been with a splinter of flint attached to some tendril, in lieu of a line, that the first fish was taken.

PREHISTORIC FORMS.

It is very curious to learn that in France a modification of this gorge-hook is in use to-day for catching eels. A needle is sharpened at its eye-end, a slight groove is made in the middle of it, and around this some shreds of flax are attached. A worm is spitted, a little of the line being covered with the bait.



SHARPENED NEEDLE USED FOR CATCHING FISH IN FRANCE.

Not eels alone are taken with this needle, for M. de la Blanchere informs us that many kinds of fish are caught with it in France.

Any doubts as to the use of the Neolithic form of fish-gorge must be removed when it can be insisted upon that precisely this form of implement was in use by our Indians not more than forty years ago. In 1878, when studying this question of the primitive hook, I was fortunate enough to receive direct testimony on the subject. My informant, who in his younger days had lived among the Indians at the head-waters of Lake Superior, said that in 1846 the Indians used a gorge made of bone to catch their fish. My authority, who had never seen a prehistoric fish-gorge, save the drawing of one, said that the Indian form was precisely like the early shape, and that the Chippewas fished some with the hook of civilization, others with bone gorges of a primitive period.

In tracing the history of the fish-hook, it should be borne in mind that an overlapping of periods must have taken place. By this is meant, that at one and the same time an individual employed tools or weapons of various periods. To-day, the Western hunter lights his fire with a match. This splinter of wood, tipped with phosphorus, the chlorates, sulphur, or paraffine, represents the progress made in chemistry from the time of the alchemists. But this trapper is sure to have stowed away in his pouch, ready for an emergency, his flint and steel. The Esquimau, the Alaskan, shoots his seal with an American repeating rifle, and, in lieu of a knife, flays the creature with a flint splinter. The net of the Norseman is to-day sunk with stones or buoyed with wood,—certainly the same devices as were used by the earliest Scandinavian,—while the net, so far as the making of the thread goes, is due to the best modern mechanical appliances. Survival of forms require some consideration apart from that of material, the first having much the stronger reasons for persistence. It is, then, very curious to note that hooks not made of iron and steel, but of bronze, or alloys of copper, are still in use on the coast of Finland, as I have quite recently obtained brass hooks from Northern Europe such as are commonly in use by fishermen there.

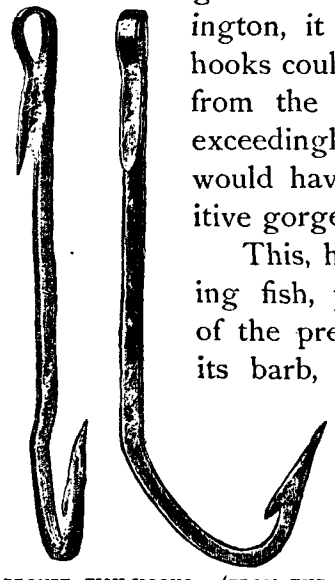
The origin of the double hook having been, I believe, satisfactorily explained, to make the barb on it was readily suggested to primitive man, as he had used the same device on fish-spears and harpoons.

This double-barbed hook from the Swiss lakes is quite common. Then, from the double to the single hook the transition was rapid. Single bronze hooks of the Lacustrine period sometimes have no barb. Such differences as exist are due to the various methods of attaching the line.

DOUBLE HOOK, BARBED. FROM SWISS LAKES.

In Professor A. M. Mayer's collection there is a Lacustrine bronze hook, the shank of which is bent over parallel with the stem of the hook. This hook is a large one, and must have been used for big fish—probably the trout of the Swiss lakes.

Hooks made of stone are exceedingly rare, and though it is barely possible that they might have been used for fish, I think this has not been conclusively shown. Wilson gives, in his work, drawings of two stone hooks which were found in Scandinavia. Though the theory that these stone objects were fashioned for fishing is supported by so good an authority as Mr. Charles Rau, the archæologist of the United States National Museum at Washington, it does not seem to me possible that these hooks could have been made for fishing. Such forms, from the nature of the material, would have been exceedingly difficult to fashion, and, even if made, would have presented few advantages over the primitive gorge.



BRONZE FISH-HOOKS. (FROM THE COLLECTION OF PROF. A. M. MAYER.)

This, however, must be borne in mind: in catching fish, primitive man could have had no inkling of the present curved form of fish-hook, which, with its barb, secures the fish by penetration. A large proportion of sea-fish, and many river-fish, swallow the hook, and are caught, not by the hook entering the jaws of the fish, but because it is fastened in their stomachs. In the Gloucester fisherman's language of to-day, a fish so captured is

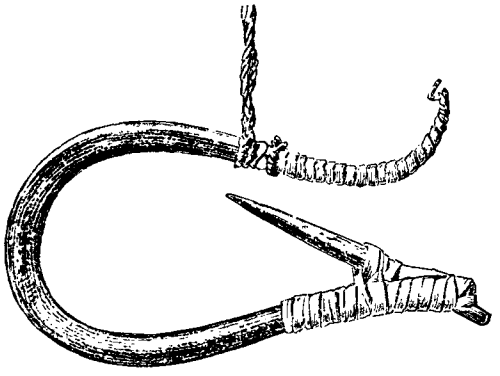
AN ALASKAN FISH-HOOK.

called "poke-hooked"; and accordingly, when the representative of the Neolithic period fished in that lake in the valley of the Somme, all the fish he took must have been poke-hooked. A bone hook, excellent in form, has been found near the remains of a huge species of pike *(Esox)*. Hooks made of the tusks of the wild boar have also been discovered with Lacustrine remains.

In commenting on the large size of the bone hook figured in Wilson's work, its proximity to the remains of large fish was noticed. When the endless varieties of hooks belonging to savage races are subjects of discussion, the kind of fish they serve for catching should always be cited. In the examples of hooks which illustrate works of travel, a good many errors arise from the simple fact that the writers are not fishermen. Although the outline of a hook be accurately given, the method of securing it to the line is often incorrectly drawn.

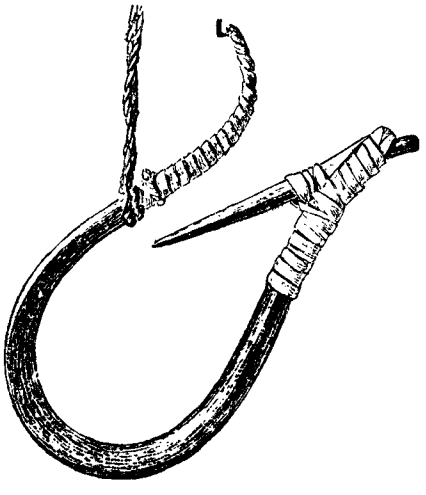
In the engraving at the top of this page, an Alaskan halibut-hook is represented. The form is a common one, and is used by all the savage races of the Pacific; but the main interest lay in the manner of tying the line to this hook. Since the fish to be caught was the halibut, the form was the best adapted to the taking of the *Hippoglossus Americanus;* but had the line been attached in any other way than exactly as represented, this big fish could hardly have been caught with such a hook.

In the drawing, the halibut-hook hangs but slightly inclining toward the sea-bottom, the weight of the bait having a tendency to lower it. In this position it can be readily taken by the fish; but



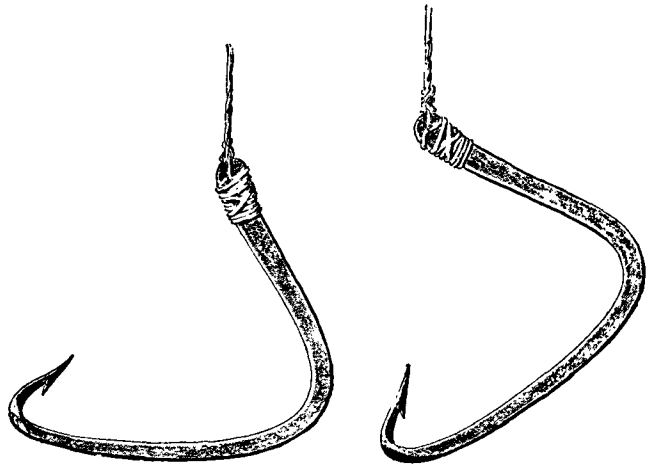
ALASKAN HALIBUT-HOOK. (FROM THE COLLECTION OF PROF. A. M. MAYER.)

should it be suspended in a different way, it must be at once seen how difficult it would be for the fish to swallow it. In this Alaskan hook must be recognized the very first idea of what we call to-day the center-draught hook. A drawing is also given of a steel hook of a peculiar form coming from Northern Russia. The resemblance between the Alaskan and this Russian hook is at first apparently slight, but they both are, nevertheless, constructed on the same principle. When this Russian hook is seized by the fish, and force is applied to the line by the fisherman, the point of the barb and the line are almost in one and the same direction. Almost the same may be said of the Alaskan hook. Desirous of testing the capabilities of this hook, I had a gross made after the Russian model, and sent



ALASKAN HALIBUT-HOOK.

them to Captain J. W. Collins, of the United States Fish Commission, stationed at Gloucester, requesting him to distribute them among the fishermen. While writing this article, I am in receipt of a letter from Captain Collins, informing me that these hooks are excellent, the captains of fishing-smacks reporting that a great many deep-sea fish were taken with them.



RUSSIAN FISH-HOOK.

A study of these hooks—the Alaskan and Russian—with reference to the method of attaching the line, explains, I think, the peculiarity of certain shell-hooks of great antiquity found in California which have puzzled archæologists. These hooks, the originals of which are to be found in the National Museum at Washington, are shown in the following engravings. The notch cut in one of the hooks seems to show that the line was attached at that place. Hang the hooks in any other position and they would catch no fish, for one could hardly suppose that the blunt barb could penetrate the mouth of the fish.

If there be some doubt entertained by American archæologists as to the use of these shell-hooks, there can be none in regard to their having barbs. The barbs turn outward, in which respect they differ from all the primitive European hooks I have seen. In confirmation of the idea advanced as to the proper place of attaching the line, Professors C. C. Abbott and F. W. Putnam, in a chapter entitled "Implements and Weapons made of Bone and Wood," in the United States Geographical Survey, west of the hun-

THE BEGINNING OF A SHELL HOOK. (IN THE COLLECTION OF DR. WEST.)

dredth meridian, write, referring to these hooks: "These hooks are flattened and are longer than wide. * * * The barbs in these specimens are judged by fishermen of to-day to be on the wrong side of a good fish-hook, and the point is too near the shank. By having the line so fastened that the point of tension is at the notch at the base of the shank, instead of at the extreme end of the stem, the defect of the design of the hook would be somewhat remedied, as the barb would be forced down, so that it might possibly catch itself in the lower jaw of the fish that had taken the hook." The summing up of this is, I think, that in an imperfect way the maker of this Santa Barbara hook had some idea of the efficiency of a center-draught hook. As the first step in manufacturing this hook, a hole was drilled in the shell, and the hook finished up afterward by rounding the outside. Dr. West, of Brooklyn, has a series of such primitive work in his collection.

SHELL HOOK. (NATIONAL MUSEUM, WASHINGTON.)

SHELL HOOK. (NATIONAL MUSEUM, WASHINGTON.)

To advance the idea that in all cases hooks have been improved by slightly increased culture among semi-civilized races would be a source of error. It is quite possible that in many instances there has been retrogression from the better forms of fishing implements once in use. This relapse might have been brought about, not so much by a decrease of intelligence, as changes due to fortuitous causes. A fishing race might have been driven away from a shore or a river-bank and replaced by an inland people.

Some primitive races still use a hook made from a thorn, and in this practice we find to-day a most wonderful survival. On the coast of France, hooks made of thorns are still used to catch fish, the fishermen representing that they possess the great advantage of costing nothing and of not fouling on the sea-bottom. The Piutes take the

SHELL HOOK FROM SANTA BARBARA. (NATIONAL MUSEUM, WASHINGTON.)

spine of a cactus, bending it to suit their purpose, and very simple barbless hooks of this kind may be seen in the collections of the National Museum at Washington.

Undoubtedly, in primitive times, hooks of a compound character were used. Just as men tipped a deer's antler with a flint, they combined more than one material in the making of their hooks, lash-

SHELL HOOK FROM SANTA BARBARA. (NATIONAL MUSEUM, BOSTON.)

ing together a shank of bone or wood with a bronze barb. It would be almost impossible in a single article to follow all the varieties of hooks used and the ingenuity displayed in their manufacture. Occasionally, a savage will construct a lure for fish which rivals the daintiest fly ever made by the most fastidious of anglers. In Professor Mayer's collection there is an exceedingly clever hook, coming from the North-western coast, which shows very fine lapidary work. A small red quartoze pebble of great hardness has been rounded, polished, and joined to a piece of bone. The piece is small, not more than an inch and three-quarters in length, and might weigh an ounce and a half. In the shank of bone a small hook is hidden. It somewhat imitates a shrimp. The parts are joined together by lashings of tendon, and these are laid in grooves cut into the stone. It must have taken much toil to perfect this clever artificial bait, and, as it is to-day, it might be used with success by a clever striped-bass fisherman at Newport.

In this necessarily brief study of primitive fishing, I have endeavored to show the genesis of the fish-hook, from the stone gorge to the more perfected implement of to-day. Simple as

it may seem, it is a subject on which a good deal of research is still requisite. "It is not an acquaintance with a single series of things which can throw light on any subject, but a thorough comprehension of the whole of them." If in the Swiss lakes there are found bronze hooks of a very large size, out of proportion to the fish which swim there to-day, it is but just to suppose that, many thousands of years ago, long before history had its dawn, the aquatic fauna were then of greater bulk than in 1883. Considerations on the primitive form of the fish-hook must even comprehend examination of prior geological conditions, differences of land and water, or such geographical changes as may have taken place. Then ichthyology becomes an important factor, for by the character of the hook, the kind of fish taken, in some instances, may be understood. We are fast coming to this conclusion: that, putting aside what can only be the merest speculations as to the condition of man when he is said to have first diverged from the brute, he was soon endowed with a wonderful degree of intelligence. And, if I am not mistaken, primitive man did not confine himself in his fishing to the rivers and lakes alone, but went out boldly to sea after the cod.

ARTIFICIAL STONE SHRIMP. (FROM THE COLLECTION OF PROF. A. M. MAYER.)

TROUT-FISHING IN THE RANGELEY LAKES.

By EDWARD SEYMOUR.

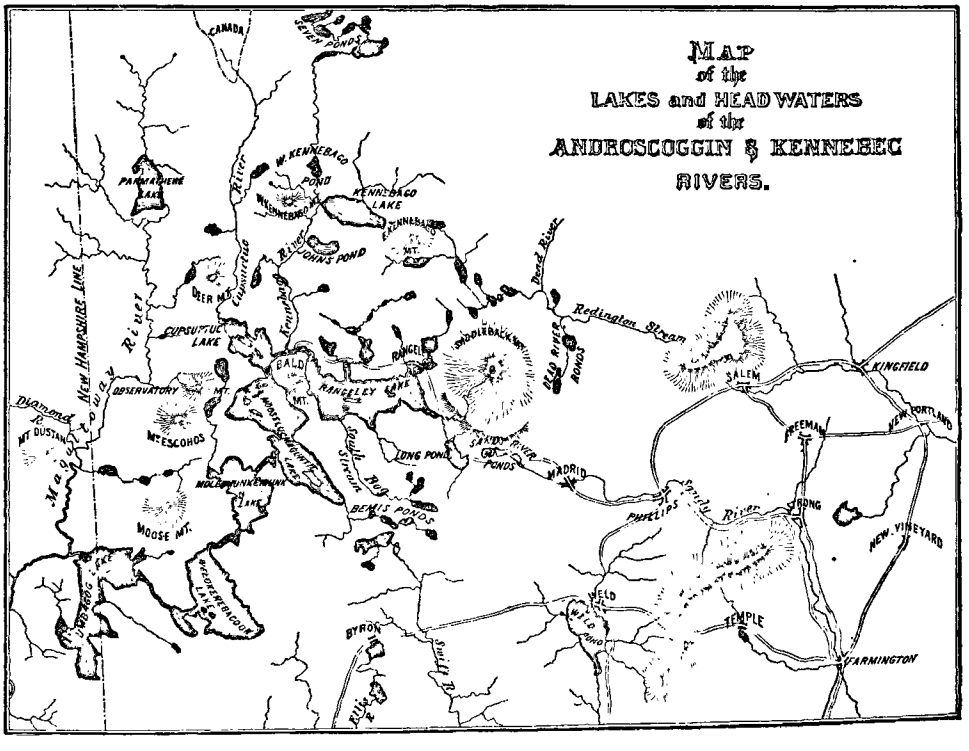
MOOSELUCMAGUNTIC, Molechunkemunk, Welokenebacook, Cupsuptuc, and Rangeley are the names carried by the individual members of a group of lakes which are yet destined to be as familiar in the literature of the American sportsman as the salmon rivers of Canada or the trout streams of the Adirondacks. These lakes lie in the western part of Maine, near the New Hampshire boundary line. The White Mountains are some thirty miles distant, a little to the west of south, and Moosehead Lake is about sixty or seventy miles to the north-east. It may be absolute incredulity as to the fish stories which are told of these lakes,—it is hard for one who has not seen a speckled trout weighing ten, eight, or even six pounds to have faith in the existence of a fish of this size and species,—or it may be despair of defining his destination when the sportsman reads the unpronounceable names which these lakes bear; but whatever the cause, the number of visitors to this region has thus far been comparatively small. Thoreau, to be sure, described it in a general way years ago, and so did Theodore Winthrop; but their accounts made it appear like a *terra incognita*, full of difficulties when it was once reached.

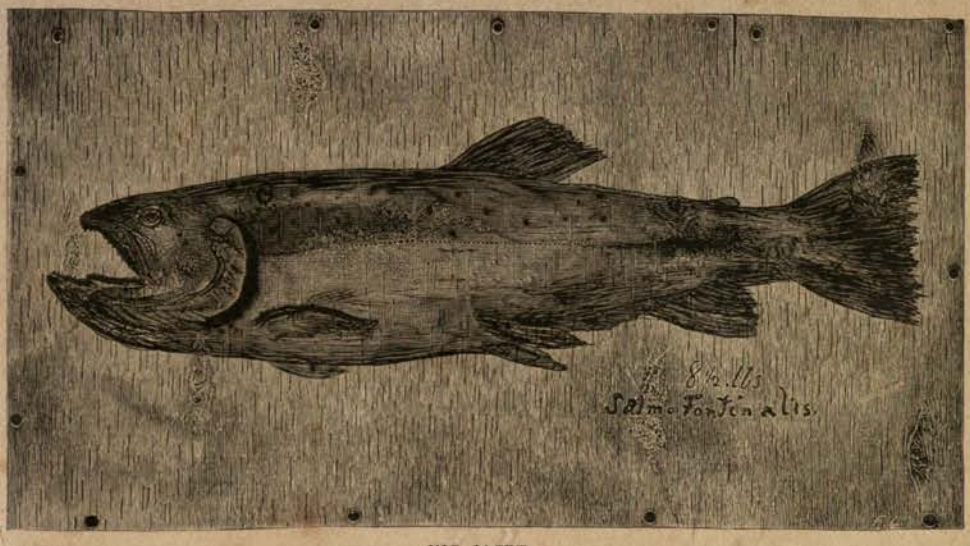
Maine is so profusely dotted over with lakes as to suggest the thought that the State has not yet been well drained, or that a slight tilting of the continent might depress the general level of this region so as to submerge it in the Atlantic. But the fact is that the lakes which have just been named are between fourteen and fifteen hundred feet above the sea-level, and are embosomed in mountains, some of which reach a height of two, three, and even four thousand

feet. Approaching from the south-east by way of Farmington and Phillips, you first strike Rangeley Lake at its extreme eastern end; and here the entire group is generally spoken of as the Rangeley Lakes. Coming from the other direction, by way of Andover, Welokenebacook is first reached; and in this region one hears the group spoken of as the Richardson Lakes, although this name is properly applicable only to Welokenebacook and Molechunkemunk.

Leaving Portland a little after one o'clock, you arrive at Farmington about six. A supper at the Forest House fortifies you for an eighteen-mile ride to Phillips; and this is materially shortened by "Uncle John's" famous "bear story" and other characteristic narratives. Stopping overnight, you take an early start the next morning, and after a stage ride of twenty miles reach Kimball's Hotel, at the head of Rangeley Lake, by noon. Taking dinner here, and after it one of the little steamers which have recently invaded the sanctity of these lakes, you are in an hour and a half landed at the foot of Rangeley.

In comparison with the unpronounceable Indian names which the contiguous lakes bear, that of Rangeley appears singularly com-





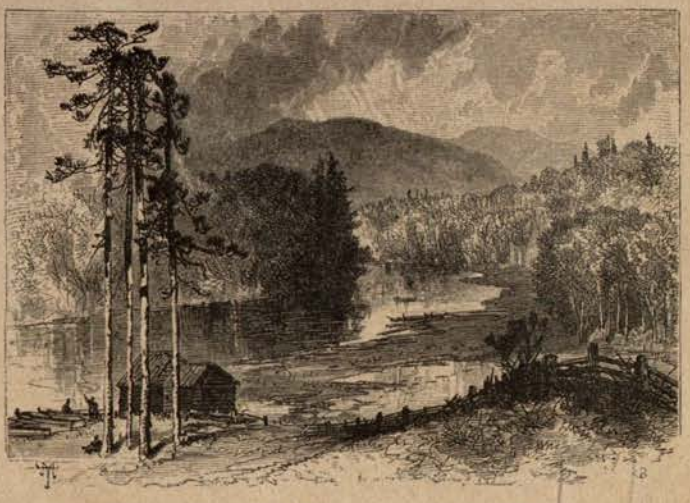
HIC JACET.

monplace and civilized, but formerly it was quite as well off as its neighbors. Originally, it was known as Oquossoc Lake, but about fifty years ago a wealthy English squire, Rangeley by name, having wearied of the civilized tameness of his Virginia estate, decided to settle in this northern wilderness. He cleared a broad tract at the outlet of Rangeley Lake, built a dam across the stream, erected extensive saw and grist mills, and expended large sums of money in other improvements. His supplies of all kinds were transported from Phillips or Farmington, a distance of thirty to fifty miles, and he was compelled to haul his lumber a hundred miles to find a market. For twenty years Squire Rangeley lived here, pushing his business enterprises with great energy and more or less success, and enjoying the field sports, of which he was passionately fond. Moose, caribou, deer, bears, and wolves were his constant neighbors; ducks, geese, partridge, and smaller game were so abundant that shooting them could hardly be called sport; and brook-trout weighing from six to nine pounds could be taken by the score from the stream which ran past his front door. When Squire Rangeley gave up the enterprise which he had pushed for a time with so much energy, his mills and buildings were all abandoned, and the clearings which he had made were rapidly seeded down by the hand of nature; pines, spruces, juniper, and fir springing up everywhere in place of the ancient monarchs of the primeval forest which he had cleared away at the cost of so

much labor. Twenty years ago, the frame and roof of the massive old mill were still standing, but in 1866 these were pulled down, and the solid pine timbers of the structure were incorporated in the new dam which was then built for the purpose of floating logs through the outlet in the early spring. Of the old homestead, which occupied a commanding site on a beautiful knoll, only the decayed foundation timbers remain. Enough of the "potash" building still stands to give a passable shelter to the benighted angler. With these exceptions, Squire Rangeley's "improvements" have all disappeared. The township which he once owned, however, still bears his name. Nearly all of the lake lies within its limits. The town of Rangeley —or the "city," as the natives call it—is half a mile back from the extreme eastern end of the lake. Most of the male inhabitants of the village devote themselves to "guiding" throughout the entire fishing season, and spruce-gum in its native state is one of its chief exports. Apart from these "industries," there is little that is noteworthy about the town, and the sportsman misses nothing which he has cause to regret in the fact that his route does not take him to the "city."

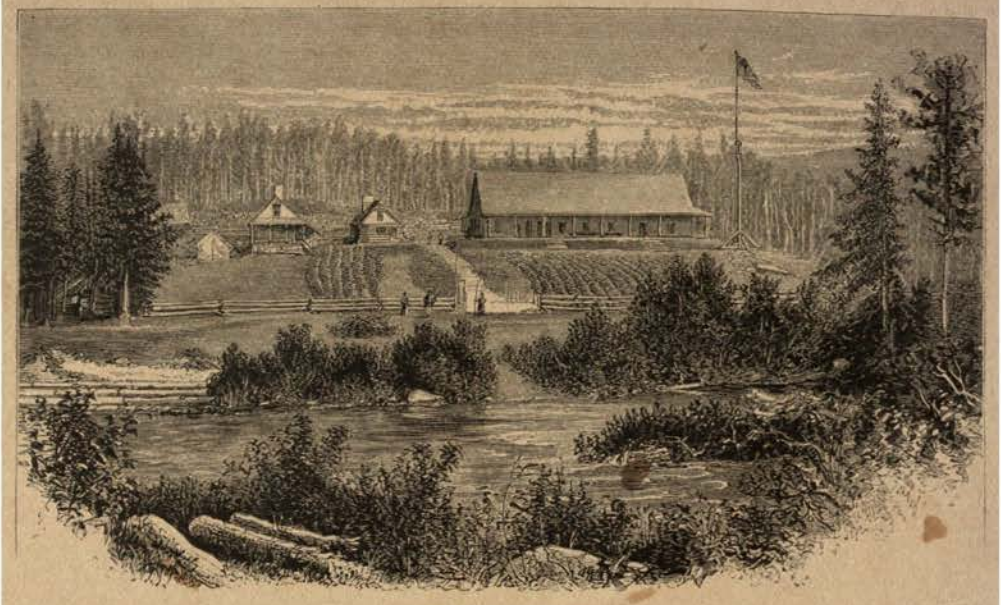
Leaving the steamer "Molly-chunk-e-munk,"—the name of which has thus gallantly been metamorphosed and Anglicized from the Indian appellation of Lake Mole-chunk-e-munk,—members of the Oquossoc Angling Association and visitors to their camp crossed a two-mile carry from the foot of Rangeley Lake to the junction of Kennebago Stream with Rangeley Stream, where is Camp Kennebago. A wagon took the baggage, while the sportsmen themselves walked across through an excellent wood road, which, however, was marshy enough in spots to make very careful stepping or very thick boots indispensable. Indian Rock—a locality famous even in the aboriginal annals of Maine, as its name indicates—is on the left bank of the stream, directly facing Camp Kennebago. Tradition relates that this spot was a favorite haunt of the Indian long before the white man ventured so far into the forest, and that as late as 1855 they made visits here from Canada each season.

The lakes of the Rangeley group are so located with respect to one another that it is extremely difficult for the visitor to get a clear idea of their relative positions. Nothing does this so effectively as an ascent of Bald Mountain, which is one of the most prominent



THE JUNCTION OF RANGELEY AND KENNEBAGO.

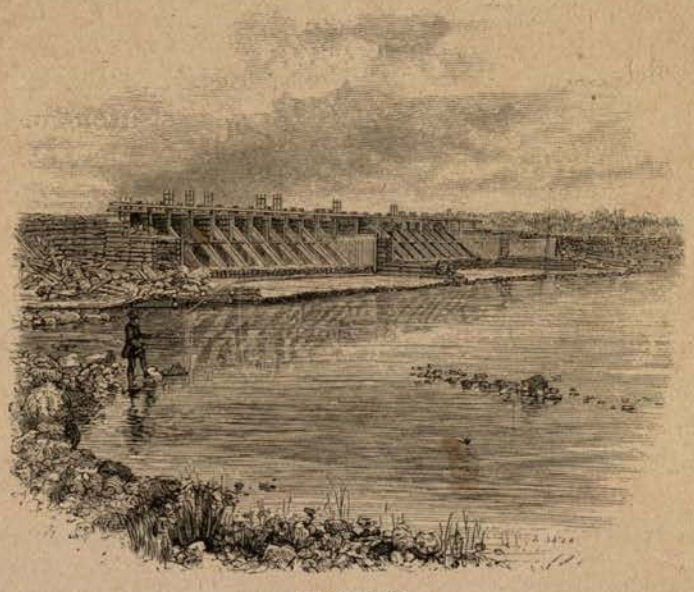
objects in this whole landscape, since it rises seventeen hundred feet above the level of the lake. The ascent may be made with comparative ease by any one at all accustomed to mountain climbing, as there are several paths to the summit. Bald Mountain is in reality a peninsula. Its base is washed by Rangeley Lake, Rangeley Stream, Cupsuptuc Lake, and Mooselucmaguntic. A narrow strip of land on the south connects it with the main-land. Once on the summit, looking eastward, you see the Rangeley, its graceful form deeply outlined and every indentation plainly marked. Old Saddleback, rock-ribbed and bare, and rising four thousand feet, faces you. Still further east are the twin Bigelows, Mount Abraham, and the East and West Kennebago Mountains. That thread of silver in the immediate foreground is the wide and rapid Rangeley outlet, which falls twenty-five feet in the two miles intervening between the point where it leaves the lake and its junction with the calmer and deeper waters of the Kennebago. At this point can be clearly distinguished the grounds and buildings of Camp Kennebago, with the stars and stripes waving from the tall flag-staff. Something more than words is necessary to do full justice to the exquisitely varied panorama of lake and mountain, the beauty of which could be hardly more than indicated by the catalogue of names necessary to identify them. Few finer views can be found in the English lakes, among the Trossachs, or even in Switzerland, than this from the summit of Bald Mountain.



CAMP KENNEBAGO.

Before describing Camp Kennebago in detail, it may be as well to give in brief a sketch of the history of the Oquossoc Angling Association, of which organization this camp is the head-quarters. So long as thirty years ago, a sportsman now and then worked his way through the wilderness to these lakes, but it is only within the last twenty years that the Rangeley, Kennebago, and Cupsuptuc Lakes, with the upper end of Mooselucmaguntic, have become at all well known to anglers. The Richardson Lakes—Welokenebacook and Molechunkemunk, with Umbagog, forming the lower lakes in the great chain whence the Androscoggin River derives its mighty power—have for the last thirty or forty years been frequented by a score or more of Boston and New York gentlemen. These sportsmen were invariably found at "Rich's," "Middle Dam," Mosquito Brook, or the "Upper Dam." Hundreds of spotted beauties, weighing from two to eight pounds, were captured by these anglers year after year, but they wisely kept their own counsel, and if an item occasionally found its way into the New York or Boston papers chronicling the arrival of a six or eight pound speckled trout, those who claimed to be best informed dismissed the paragraph with a sneer at the ignorance of editors who did not know the difference between brook-trout and "lakers." In 1860, Henry O. Stanley,

of Dixfield, now one of the efficient commissioners of fisheries for the State of Maine, organized an expedition to penetrate to the lakes from the upper end. Twenty years before, Mr. Stanley's father had made the survey of much of the lake country, and, discovering the extraordinary size of the trout, had frequently repeated his visits.



UPPER DAM.

The son now and then accompanied his father on these trips, and with such a preceptor in the gentle art, and with such opportunties for its practice, it is not strange that Mr. Stanley should have achieved the distinction of being the champion fly-fisher of the world. His record of brook-trout weighing from three to nine and a half pounds, all taken with the fly, reaches many hundred. The party which Mr. Stanley headed on the occasion alluded to made its way to the lake, *via* Dixfield, Carthage, Weld, Phillips, and Madrid, striking first the upper end of Rangeley. One of its members, Mr. George Shepard Page, of New York City, was so delighted with his experience upon this trip that in 1863 he made a second journey by the same route. He returned from this trip, bringing with him eight brook-trout weighing respectively 8⅜, 8¼, 7¼, 6½, 6, 5½, 5, 5—total, 51⅞ lbs., or an average of nearly 6½ lbs. each. William Cullen Bryant, Henry J. Raymond, and George Wilkes were pre-

sented with the three largest, and made acknowledgments duly in the "Evening Post," the "New York Times," and the "Spirit of the Times." Then there broke out an excitement among anglers altogether without precedent. Scores of letters were sent to the papers which had presumed to call these brook-trout,—some of them interrogative, others denunciatory, others theoretical, and others flatly contradictory. The Adirondacks had never yielded a brook-trout which weighed more than five pounds, and that, therefore, must be the standard of brook-trout the world over. But Mr. Page had foreseen the violent skepticism which was sure to manifest itself, and had sent a seven-pounder to Professor Agassiz, who speedily replied that these monster trout were genuine specimens of the speckled or brook trout family, and that they were only found in large numbers in the lakes and streams at the head waters of the Androscoggin River, in North-western Maine. In 1864, several New York gentlemen visited Rangeley, among the number Messrs. Lewis B. Reed, R. G. Allerton, and L. T. Lazell. Upon their return, they fully corroborated the report made by Mr. Page the year previous, and brought back with them several trout which weighed from three to eight pounds. In 1867, Mr. Page again visited Rangeley in company with Mr. Stanley, and ten days' fishing by these two gentlemen and Mr. Fields, of Gorham, N. H., showed these extraordinary results:

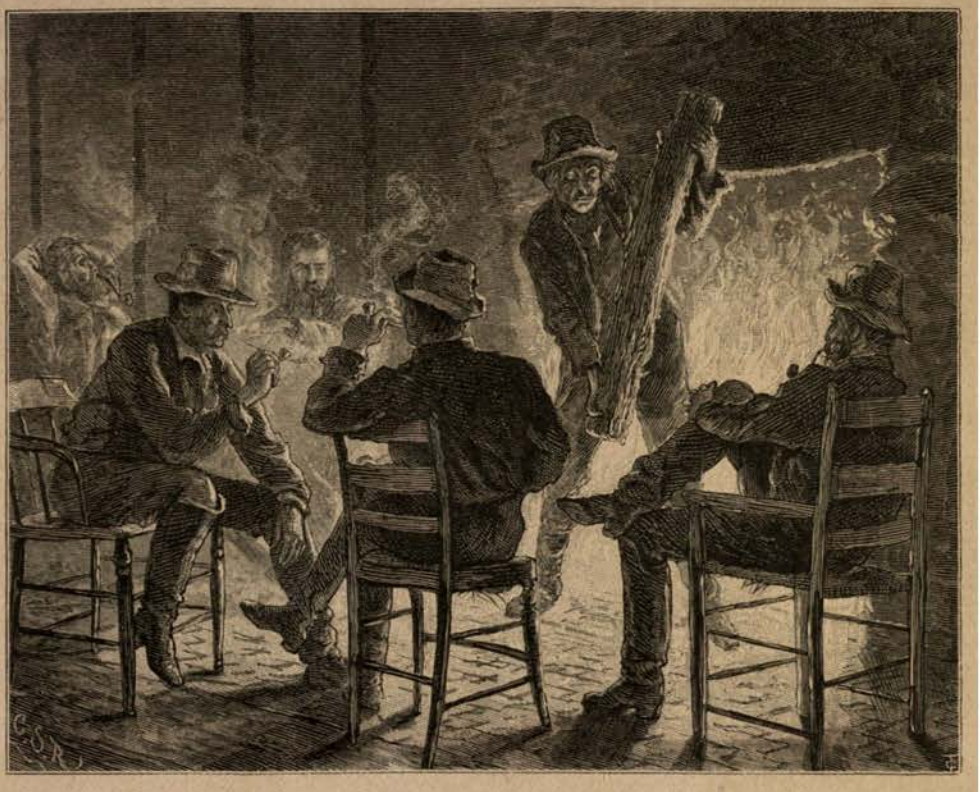
No. of Trout.	Weight of each in lbs.	Total weight. lbs.	No. of Trout.	Weight of each in lbs.	Total weight. lbs.
3	2	6	2	5¾	11½
1	2¼	2¼	5	6	30
3	2½	7½	2	6¼	12½
2	2¾	5½	1	6½	6½
5	3	15	1	7	7
5	3¼	16¼	3	7¼	21¾
3	3½	10½	3	7½	22½
2	3¾	7½	2	7¾	15½
1	4	4	2	8	16
2	4½	9	1	8¼	8¼
1	4¾	4¾	1	8½	8½
3	5	15	1	8¾	8¾
1	5¼	5¼	1	9½	9½
1	5½	5½	1	10	10
Average, nearly 5 lbs.		59			293

THE INTERIOR OF THE CAMP.

In 1868, the number of anglers visiting the lakes had so rapidly increased that it was decided to organize an association for the purpose of leasing ground, erecting buildings, and purchasing boats. Messrs. Bowles, of Springfield, Mass., Lazell and Reed, of Brooklyn, N. Y., George Shepard Page and R. G. Allerton, of New York, Hon. W. P. Frye, of Lewiston, Me., W. S. Badger, of Augusta, Me., and T. L. Page, of New Orleans, who were all in adjacent camps at the outlet of Rangeley Lake, formally organized the Oquossoc Angling Association by the election of Mr. G. S. Page as president and Mr. L. B. Reed, secretary. In the year following (1869), the association purchased the buildings, improvements, and boats belonging to C. T. Richardson at the junction of the Rangeley and Kennebago, and immediately began the erection of Camp Kennebago. Meantime, the membership rapidly increased, and in 1870, the association was formally incorporated under the laws of the State of Maine. The membership of the association is limited to seventy-five. Shares are $200 each, and the capital stock is $10,700, which is invested in camp buildings, furniture,

boats, etc., etc. The annual dues are $25. The camp charges are $2 per day for board, $1 for board of guide, and fifty cents per day for use of boats. The best guides receive $2 per day, making the total cost per day while in camp $5.50, unless two persons choose to fish from the same boat, when, of course, the expense of guide, board for guide, and hire of boat may be shared. The fishing season extends from about May 25 to October 1, when the law prohibits the capture of trout save by written permission of the fish commissioner for scientific purposes. During the first month and the last three weeks of the fishing season, guests are only admitted upon the invitation of members, since the camp accommodations are then likely to be overtaxed; but between June 20 and September 10 the camp is open to all visitors upon the same terms as to members. Ladies and children are also admitted between the dates named. A roomy building with separate apartments is specially reserved for them, and as two or three female servants are constantly employed in the camp, they are sure to be quite as comfortable as in ordinary country hotels.

There are some peculiar features in the arrangement of the camp buildings which will be of interest to those who are not familiar with such structures. The main camp is a substantial board structure, 100 feet long by 30 feet wide. At its extreme westerly end is a well-equipped kitchen, and adjoining it, is a dining-room. Then comes the main apartment, which is occupied as a sleeping and sitting room. This room takes the full width of the main building (30 feet), is about 60 feet in length, and from the floor to the gable is 30 feet in the clear, giving it a most spacious appearance and securing thorough ventilation. There are no partitions in this apartment, but twenty-five or thirty beds are ranged along its sides, and at its extreme easterly end is a large open fire-place, around which the weary anglers gather after their day's sport, and entertain each other with the rehearsal of their experiences and exploits. As one huge log after another blazes up,—for the nights are seldom so warm that a fire is oppressive,—story after story passes around. It rarely happens that some one of the circle has not captured a six or eight pound trout during the day, and the one who has been so fortunate is, of course, the hero of the hour. With what kind of fly the fish was captured, how long it took to land him, the narrow escape which the



TELLING FISH-STORIES.

lucky angler had from losing his prize just as the guide was netting him, are points which must be rehearsed over and over again. Could one-tenth of the fish-stories which have thus been rehearsed around this famous old fire-place in Camp Kennebago be put on record they would make a book which would throw far into the shade any volume of piscatorial experience that has ever yet seen the light. Before eleven o'clock, the weary anglers are all in their beds, and the camp sinks into a silence which is undisturbed save by some obstreperous snorer, at least until daylight the next morning, when some fisherman who has had poor luck the previous day starts out with a desperate determination to retrieve his fortunes by testing the virtue of early fishing.

A tour around the upper end of Lake Mooselucmaguntic discovers a number of snugly constructed buildings, some owned by private parties and others by members of the Angling Association, who spend several weeks consecutively at the lake during the fishing season.

ALLERTON LODGE.

Prominent among the latter are those of Hon. W. P. Frye at the Narrows, and that of R. G. Allerton at Bugle Cove, just at the foot of Bald Mountain. Allerton Lodge is a thoroughly built house, fully equipped with all the comforts of civilization. It is located upon a rocky bluff twenty feet or more above the level of the lake, and commands a magnificent view. Since Bugle Cove is one of the best fishing-grounds on the lake, its proprietor, who is one of the most enthusiastic and persevering of anglers, never fails to make up such a score during his visits in June as to excite the emulation of all other visitors during the rest of the season.

But it need not be imagined that it is only the practiced anglers who are successful in the Rangeley Lakes. There is in Camp Kennebago a record-book in which each visitor is expected to set down his score when he finishes his stay. This exhibits some catches nearly as remarkable as that which has been set down before. In 1869, eleven members of the association in six days' fishing, besides a large number of smaller fish, captured thirty trout weighing as follows: three of 4 lbs. each; one 4¼ lbs.; two 4¾ lbs. each; three 5 lbs. each; one 5¼ lbs.; four 5½ lbs. each; two 6 lbs. each; two 6¼ lbs. each; two 6¾ lbs. each; two 7 lbs. each; one 7¼ lbs.; one 7½ lbs.; three 8 lbs. each; one 8½ lbs.; one 9 lbs.;—total,

181¾ lbs., averaging over 6 lbs. each. Then the ladies find the locality a wonderful one for great "catches"—of trout. Mrs. Theodore Page has taken several weighing between 6 and 9 lbs. each, and even the young folks are fortunate. Masters Harry and Allie Page, aged respectively 5½ and 3½ years, it appears from this record, during one visit caught 57 trout weighing 37 lbs. Ten averaged 1 lb. each, and one weighed two lbs. Lest these large catches should provoke remonstrance against such wholesale slaughter of this beautiful fish, it should be stated that it is the almost invariable rule to return to the water all uninjured trout weighing less than half a pound. Those hooked so deeply that they cannot live are kept for consumption at the camp. The larger fish, as soon as caught, are deposited in the car which each boat always has with it. Upon the return to camp at night, the living trout are carefully transferred to a larger car,—which in this case is the name given to an ordinary dry-goods box with slats on the bottom and sides, admitting free passage through of the water,—and at the end of his stay each angler, if he desires to take a box of trout home with him, selects the largest and releases all the others, which speedily find their way to the deep waters of the lake again. Thus the actual destruction of fish is by no means so extensive as it would at first appear that it might be.

In general, the early spring fishing and the late fall fishing are decidedly the best and most enjoyable. The pestiferous black flies do not appear until June 10, but their attentions can be warded off by a liberal application to all exposed parts of the neck, face, and hands of a mixture of tar and sweet oil in equal parts. Oil of pennyroyal, in sufficient quantity to make its odor plainly perceptible, is thought by many to render this preparation more effective. By September, with exemplary regularity, the black flies disappear, and with them goes the only hinderance to complete enjoyment of outdoor life.

As regards methods of fishing, it need only be said that the high-toned angler will not tempt his intended victim with anything but a fly at any season. The best fly fishing is to be had in the streams in the spring and in the lake in the fall. Those who go to the lakes in the spring and early summer determined to catch the biggest fish at all hazards must seek them with live minnows for bait, by still fishing, or by trolling in deep water. In either case, the

law rules out all gang-hooks. The "single baited hook" only is permitted, and any one infringing upon this wise restriction exposes himself to severe penalties. A larger hook, with a heavier leader than is used in ordinary brook-trout fishing, is called for in these waters; but upon such points and with reference to the varieties of flies which are best for the purpose, advice may be had at any of the fishing-tackle stores. In general, however, give preference in making your selection to the more subdued colors, and do not permit yourself to be stocked up with an immense variety. Five or six kinds, well selected, will be more than enough to give the fish ample range for choice.

AN EXPERIMENT IN NATURAL PHILOSOPHY.

As I have already stated, these big trout are caught either in the lake or in the streams which feed it, according to the season; and each kind of fishing has its peculiar incidents and surprises. Both Kennebago and Rangeley streams are too deep and swift to be waded in the orthodox style, although at certain seasons they are so shallow in places as to make their navigation even by boats of the lightest draft an undertaking of no little difficulty. Rangeley Stream, between the famous dam at the outlet of Rangeley Lake and Indian Rock, a distance of perhaps a mile and a half, abounds in pools which the big trout love to frequent. It is not unusual for the more enterprising fishermen to work their way up Kennebago Stream four, five, or even six miles. This trip involves

"STONY BATTER."

hard labor by the guide in poling or in pulling the boat over the frequent shallows, and great caution is necessary to guard against such a mishap as the pencil of that enthusiastic and scientific sportsman, Dr. F. N. Otis, has reproduced on the opposite page, where an unexpected push by the guide's pole or the sudden striking of the boat's bow upon the pebbly bottom sends the surprised fisherman, heels over head, into the bottom of his boat, while his leader and flies are sure to become securely hooked in the loftiest overhanging branch within reach. Still, the discomforts of these excursions up the Kennebago or Cupsuptuc streams are sure to be rewarded with some rare sport.

Nor is the fishing in the open lake without its occasional surprises. I very well remember an incident which happened upon the occasion of my first visit to Camp Kennebago, when I was a tyro in trout-fishing, and had not been fully initiated in the use of the fly. My boat was at anchor some distance below "Stony Batter," and with humiliation I confess that I was angling with a minnow. For a half hour or more there had been no sign of a trout in my vicinity, and I had carelessly laid my pole across the boat, with the butt under the thwart. Suddenly there was a "strike." Before I could seize my pole, the trout had carried the line directly under the boat with such a rush as to snap the rod — which I ought to say, in justice to the professional makers, was a cheap store rod — into two or three pieces. The trout escaped, as he deserved to do, and for once I could not help confessing myself outgeneraled. This mishap, of course, put an end to my fishing for the day; but fortunately it occurred quite late in the

afternoon, and thus left me at leisure to enjoy a scene which was in itself singularly beautiful, and which was an appropriate setting for a striking incident. As the sun was sinking behind the hills, close under which we were fishing, it threw their long shadows far out on the lake, while the waters on the eastern shore were still bright with the golden light of the gentle June evening. In the distance, we descried three specks upon the water, which gradually grew in size as they steadily approached us, until we made out three batteaux laden with the "river-drivers," who were returning from their perilous and tedious journey down the Androscoggin with the great log-rafts,—the results of the previous winter's lumbering. The first sound which disturbed the Sabbath-like stillness of the lake, as the batteaux came nearer, was the steady thump, thump, thump of the sweeps in the rowlocks. Then we heard the sound of voices, but at first too indistinctly to determine whether it was the echo of boisterous talk, or some river-driver's song, with which the oarsmen were keeping time. But soon the sounds, as they became linked together, grew into that grand old tune, "Coronation," and the words,

"All hail the power of Jesus' name!"

came to us over the peaceful waters, sung with all the strength, steadiness, and fervor which might be expected in a congregation of religious worshipers. Nothing could have been in more perfect harmony with the scene, and yet nothing could have been a greater surprise than to hear this tune, and the words with which it is so inseparably connected, coming with such zest from the throats of men who have gained an undeserved reputation for roughness, not to say profanity, of speech.

During the extremely warm weather, the trout naturally run deep in the lake, since there only can they find the cold water in which they thrive; but even then the streams afford good sport; so that the angler cannot spend a week at the lake during the fishing season without certainty of getting better sport, and more of it, than can be found in any other resort in the country. Another fact that adds greatly to the pleasure of fishing in the Rangeley Lakes is, that with the exception of the land-locked salmon

HEAD OF TROUT.

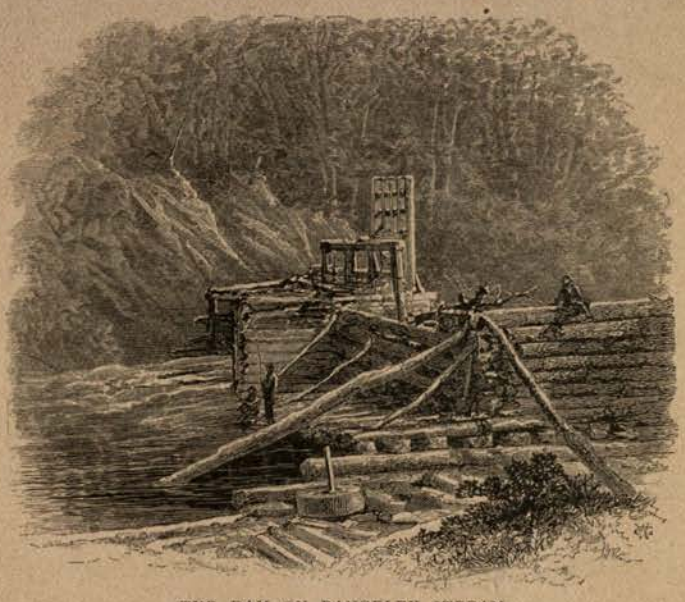
lately introduced, they contain no other fish besides the trout and the smaller fish upon which he feeds. Of the latter, there are three varieties,—the chub, the sucker, and the minnow, or "red-fin," as they are locally termed. All these exist in countless numbers in the streams and at the outlets of these streams into the lake. There is still a fourth variety, called by the natives the "blue-back" trout, the *Salmo Oquossa* (so named because it is peculiar to these waters), which is also generally supposed to furnish food to the monarchs of the lake. They come in an immense army, actually filling the streams here and there with a dense, struggling mass, which the natives capture by the bushel and by the barrel in nets, buckets, and pails; even scooping them out by hand and throwing them on the bank. They are salted down and preserved in the same way as mackerel are cured. These blue-back trout have never been found more than nine inches in length, nor less than six inches. In flavor, they are quite as rich and delicate when cooked as the brook-trout. After spawning, they return to the lake just as suddenly as they appeared; and, notwithstanding the numbers in which they are captured during their brief stay in the stream, they do not diminish in multitude year after year. It is inferred that their regular haunts must be in the deepest waters of the lake, since their capture by the enticements and appliances which prove irresistible to the speckled trout is almost unknown.

Numerous experiments and continued observations, made under the auspices of some of the practical pisciculturists belonging to the association, have developed results full of interest and of much prac-

tical value. For instance, in reply to queries as to the probable age of the mammoth trout found in the Rangeley Lakes, Professor Agassiz emphatically declared that "no man living knew whether these six and eight pounders were ten or two hundred years old." To get some light upon this question, Mr. Page conceived an ingenious device, which he at once proceeded to put in execution. Platinum wire was obtained, cut into one and a half inch lengths, flattened at one end, and various numbers were stamped on the surface, from ½ to 4, also the numbers 70, 71, 72, to denote the year. As trout were captured they were weighed, one of these tags was passed through the skin just under the adipose fin and securely twisted, and then the fish was liberated. In the course of the two or three years named a large number of these trout were thus labeled. Of course, the chances that any of them would be caught seemed infinitesimally small, yet in 1873 one of them reported. In June of that year, Mr. Thomas Moran, the artist, captured a fine, vigorous trout weighing 2¼ lbs. Upon taking him from the landing-net, the platinum tag flashed in the sunlight. Upon examination, the mark, "½—71," was discovered, thus establishing the curious fact that this particular fish had gained 1¾ lbs. in two years.

The entire influence of the association has uniformly been thrown in favor of a rigorous enactment of the laws protecting the trout in the spawning season and regulating the mode of capture. More than this, it has taken the most active measures in the direction of increasing the supply of fish in the waters to which it has access. Land-locked salmon have been introduced (this is one of the very few species which co-exist with the trout), and a large number of the young of the sea salmon *(Salmo salar)* have also been put into the lakes. Last season, several land-locked salmon two years of age, and weighing half a pound, were captured. This year those of this same growth will probably have reached a pound, and in the course of two or three years these fish, which some anglers regard as even more "gamey" than the trout, must become very abundant.

Some of the earliest and most successful efforts in trout culture are connected with the annals of Rangeley. In October, 1867, Mr. Page transported two live trout—one a male weighing ten pounds, the other a female weighing eight and a half—from Rangeley to his home in Stanley, N. J., a distance of nearly five hundred miles. An



THE DAM ON RANGELEY STREAM.

oblong box of forty gallons' capacity, lined with sponge which was covered with muslin, and having an air-pump attached, so as to make constant renewal of the air easy, had been carefully prepared. This box was carried from the head of Rangeley on a spring wagon to Farmington, a distance of thirty-five miles, and thence by railroad to its destination in New Jersey. Three days were occupied in the journey, but by unremitting care night and day the magnificent fish were deposited alive in the pond at Stanley. Unfortunately, the weather was unusually warm for the season of the year. The temperature of the pond could not be reduced below 65°, and the larger of the two trout lived only eight hours. The female survived six days longer. Thus the attempt to propagate Rangeley trout in New Jersey by natural means failed. The larger of these trout was, unfortunately, not weighed when first captured, but, when dead, balanced the steelyards at precisely ten pounds. It is a well-known fact that all fish lose in weight after capture, and Professor Spencer F. Baird and Professor Agassiz both gave it as their opinion that when taken this trout weighed at least eleven and a half pounds. He measured thirty inches in length and eighteen inches in circumference. His tail spread eight inches and his jaws six and a half inches. He was mounted by one of the most skillful taxidermists in the country, Mr. Dickinson, of Chatham, N. J.

About this time (1867), Mr. Seth Green's attempts to propagate trout artificially had begun to attract attention, and, anticipating the possibility of failure in transporting the live trout so great a distance, Mr. Page, to make assurance doubly sure, had secured 30,000 trout eggs which had been impregnated by the milt of the male in the method now so well understood. These had been carefully packed between layers of moss, and immediately upon their arrival at Stanley were deposited in the hatching-houses. After the usual interval of six weeks, Mr. Page had the gratification of seeing the newly hatched trout. In due time they were fed, and when they had attained a suitable size were liberated to stock the stream below the hatching-houses. Thus we have the history of one of the earliest and perhaps the first attempt in this country to take eggs from wild fish, transport them five hundred miles, and successfully hatch them.

The determination of the members of the Oquossoc Angling Association fully to maintain the superiority of their fishing-grounds is conclusively manifested by the arrangements for artificial propagation which were made on Bema Stream, at the extreme south-eastern extremity of Lake Mooselucmaguntic, under the direction of Messrs. Page and L. L. Crounse. Three miles up Bema Stream, at the foot of a bold mountain, there bursts out from a rocky bed a series of remarkable springs, which in the spring and fall furnish much of the water that flows down the rapid stream to the lake. The water of these springs rarely falls below 45°, or rises above 49°, and is therefore peculiarly adapted to the propagation of trout. The smaller trout from the lake, weighing two pounds and under, make these springs and the stream in the vicinity their spawning-grounds, and in the month of October they crowd the waters in great numbers. Mr. Stanley, while securing fish for spawn, has actually dipped up as many as six trout of an average weight of a pound each at one scoop of his dip-net. As is their habit, the males always come up in advance and clear off the beds, and in a few days the female follows. So strong is the instinct which leads them to the spawning-beds that the trout, like the salmon, will force themselves over shallows in the stream where there is not depth enough to permit them to swim. Just at the spawning-beds, and over the little branch which carries the water of the springs to the main stream, the gentlemen above named erected a hatching-

CLEFT ROCK.

house. In return for this privilege, they agreed to place in the waters each season from 50,000 to 100,000 young fry, recompensing themselves for their trouble, if they could, by taking out spawn for use in other waters. In the seasons of 1873 and 1874, they were able to deposit in the streams more than the maximum of spawn agreed on. In 1875 and 1876, Mr. Stanley's duties as fish commissioner prevented his giving this matter the necessary attention; but the young fry were so successfully hatched the first two seasons that a sudden increase of small trout has been noted in the stream itself and as far up as the Bema Ponds, four miles above the hatching-houses. Some of the spawn were successfully transferred to other waters,—the eggs had to be carried out in December, on the backs of men, nine miles through the woods,—and Mr. B. B. Porter, the pisciculturist of Crystal Springs, New Jersey, can now show Rangeley trout double the size of any other variety of trout of the same age.

The method of capturing trout for their spawn was either to dip them up near the springs with an ordinary net, as they came up to deposit the spawn, or to take large trout in the lake, chiefly with the fly, in advance of their ripening, and to "car" them until they were stripped, when they were restored to the lake. At one time in the fall of 1874, Messrs. Stanley and Hayford who were in charge of

CATCHING A FIVE-POUNDER.

the operation, had in a large car at the mouth of Bema Stream over two hundred of these famous trout weighing from one pound to six pounds each,—a sight which could not be paralleled in any other waters in the world.

The camps at Bema look out over the broad expanse of the bay which opens toward the north-west, and are very prettily situated. The very remoteness of the camp secures its freedom from the visits of miscellaneous tourists, while the beauty of its location and the excellent fishing to be found in its immediate neighborhood amply justify the wisdom shown in its selection by the gentlemen who control it. They and their immediate friends here enjoy a coveted seclusion and keep clear of intruders by a lease of three miles of the shore which covers the entire southern end of Bema Bay. Its position, however, exposes the bay in its front to the north-west gales which prevail to a greater or less extent through the whole season. Those who are accustomed to wait for the traditional "fly breeze" will receive with incredulity the statement that the largest trout have been taken in these waters when a north-west gale was driving the spray from the white-capped waves, and when the persevering angler found a seat in the bottom of his boat the most comfortable position from which to cast his fly, if, indeed, the fly can be said to be "cast" when the wind carries the line so straight from the rod that it is difficult to keep the fly on the surface of the water. Yet the keen-eyed trout, at this very time, rushes the most unwarily

upon his imaginary prey. A sudden splash from which the spray flies in the face of the wind betrays the presence of one of these mammoth trout. If he misses the fly, a second cast almost invariably provokes the fated fish to a more eager rush. Rising through the topmost curl of the wave, his side, brilliant in purple and gold,

THE SPIRIT OF MOOSELUCMAGUNTIC.

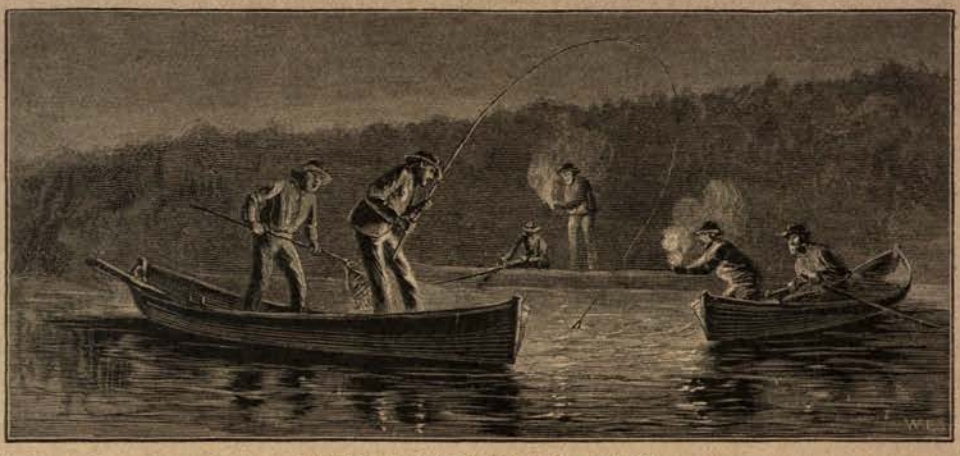
gleams in the sunlight for an instant. But this time he is fast, and there is a thud as if a locomotive, under full headway, had been hooked. With a mad rush, he strikes for the depths of the lake, but the light rod yields like a thing of life. Whether the trout weigh one pound or eight, the lance-wood or split bamboo is faithful to the trust placed in it. With a pertinacity almost human it clings to the frantic fish, steadily drawing him to the surface until, after a contest which may have lasted only ten minutes or which may have been prolonged through two hours, the landing-net of the skillful guide deposits him in the boat.

Apart from the risk of losing your trout because of the difficulty of landing him while the boat is tossing on the waves, this fishing in rough water has its perils, which add to its excitement if they do not increase its pleasures. One bracing September morning, I was industriously casting my fly from my boat, which was anchored three or four hundred yards from the sand-spit at the mouth of Bema

Stream. The "Spirit of Mooselucmaguntic" (an effigy which the ingenuity of some of the campers had constructed from the gnarled roots which the waves had cast up on the beach and worn into incredibly fantastic shapes) looked upon the scene with a grin which foreboded some dire disaster. My guide, in despair at the determination which persisted in casting a fly in such a gale, was fishing from the bow of the boat with a drop line. A sudden exclamation from him, a start and a sharp twitch, indicated that he had hooked a large fish. I turned to see him pull a beautiful three-pounder over the thwart, which he had depressed to the level of the water to save the trouble of using the landing-net. But our triumph was of short duration. No sooner had the victim been deposited in the boat than we both, in an instant, found ourselves pitched out of it and struggling in the water of the lake. Unnoticed by either of us in the excitement of the moment, our boat had swung around into the trough of the sea, and a huge wave had dashed in, completely filling it, and tipping it so nearly over that as the water came in we went out. Confident in my own swimming powers, I called to my guide, as soon as I came to the surface and grasped hold of the boat, that I could take care of myself, and not to be alarmed on my account. But a desperate series of flounderings on his part indicated to me what I had never before suspected, that, notwithstanding the fact that he had been a guide upon these waters for thirty years, *he could not swim a stroke.* His frantic efforts to insure his own safety quickly tipped the boat bottom-side up, and again sent us both under. When I came to the surface, he was seated astride of the bow in comparative safety, while the second submersion had so water-logged my heavy winter clothing that I found it impossible to do more than hang on to whatever part of the slippery bottom of the boat I could best clutch. Then it began to look as if our strait was desperate. The anchor-rope held our boat with the same firmness upon which we had before congratulated ourselves, and I fear that it would never have occurred to either of us to cut it and let the boat drift ashore. Fortunately, however, another boat happened just at this crisis to be starting out upon the lake. By his vigorous yells, my guide attracted the attention of those in the other boat, and in a few moments it was alongside. My guide easily stepped from his place of refuge into the rescuing boat, nearly upset-

ting that in his precipitancy, and then it came to my relief. But I could neither lift myself over its side, nor could those who were in it pull me in without imminent risk of capsizing. There was no other way but to tow me ashore ingloriously. As soon as my feet struck bottom, I waded to the beach, and then for the first time realized how completely my strength was exhausted, and for how short a time, in all probability, I could have sustained myself in the perilous position from which I had so happily escaped. A blazing camp-fire and a dry suit of clothes quickly restored my equanimity, which was, however, completely destroyed again by the reflection, which in an instant burst upon me, that my three rods, including a new split bamboo, together with a carefully prepared box of fishing-tackle, which contained my fly-books, were at the bottom of the lake and in water at least twelve feet deep. At first, it seemed as if my sport for that trip at least had been completely and disastrously terminated. One of our guides, who was an expert swimmer, comforted me by the assurance that he could easily recover the more important articles by diving for them, and for a time it appeared as if this would be the only chance, until it occurred to us that one of the most enterprising and ingenious of our party had a day or two before constructed a square box with a pane of glass in the end, with which, after the manner of the sponge and pearl divers, he had been studying the bottom of the lake to discover, if possible, the localities which the trout were the most likely to frequent. Taking this out with us the next day, we found that the contrivance worked to a charm. Thrusting below the ripple the end of the box which contained the glass, and excluding the light as far as possible from the other end, every object on the bottom of the lake, at a depth of even fifteen or twenty feet, could be clearly discerned. A little patient labor with this and a large landing-net with a handle of sufficient length was finally rewarded with the recovery of every article of any value. The fly-books, however, were both destroyed, and part of their contents were seriously damaged; still, these were trifling offsets to my own fortunate escape and that of my guide.

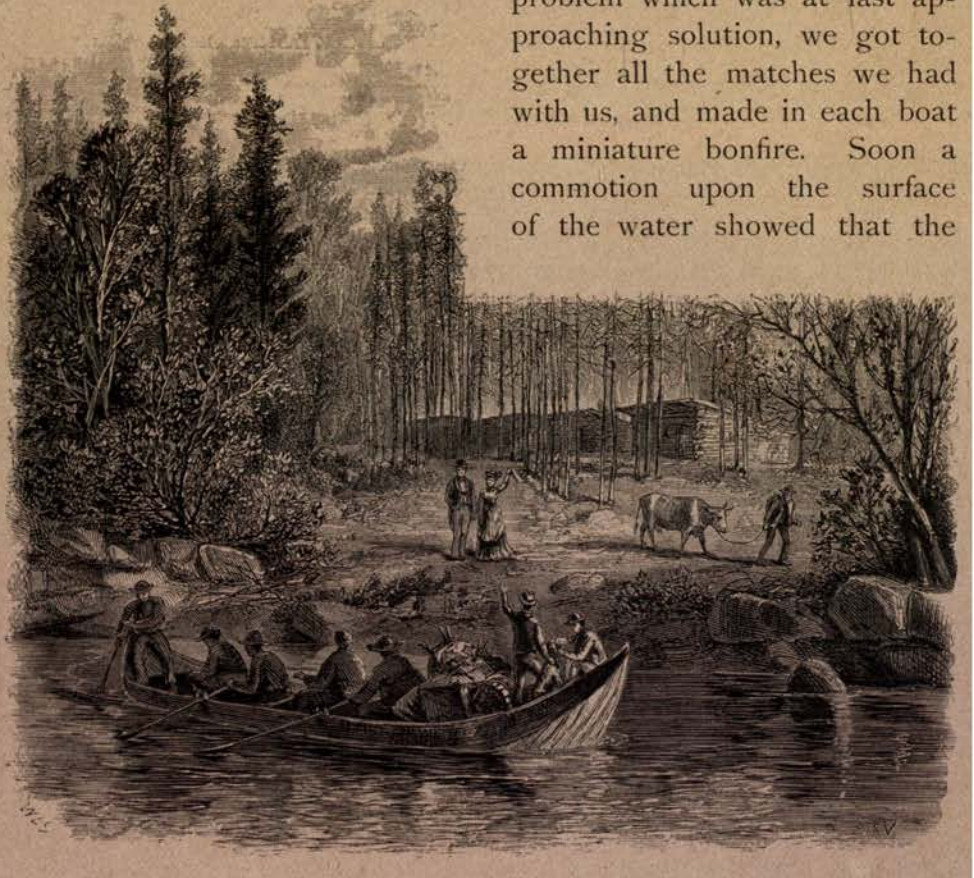
An incident in strong contrast with this unfortunate beginning terminated this same eventful fishing trip. Mr. Page, although the most expert and enthusiastic fisherman of our number, had devoted



"MATCHING" A SEVEN-POUND TROUT.

himself so assiduously to caring for the comfort of his guests that his own chances at catching the big trout had been seriously lessened. It was our last afternoon together, and as the hours waned toward sunset, the surface of the lake became as smooth and as brilliant as burnished steel. Our three boats were anchored within a short distance of each other, and we were condoling with our friend upon his lack of luck, when suddenly, a few rods away, there was a quick swirl and splash which told of the presence of a big fish. "That's my trout!" exclaimed Mr. Page, as he ordered his guide to haul anchor and scull him quietly over the spot where the fish had appeared. Two or three casts of the fly, and in an instant, with a ferocious rush, the trout had hooked himself so firmly that his final capture became only a question of time,—but of what a time! After two or three desperate struggles, during which he was met at every turn with the skill of a practiced fisherman, he settled sulkily at the bottom of the lake. Meanwhile, a gentle east wind had sprung up with the setting sun, and Mr. Page's boat began to drift with it gently to the westward. Fifteen minutes, half an hour, three-quarters of an hour passed, and from our anchorage we could see that the trout showed no signs of yielding,—nor did Mr. Page. As it gradually grew too dark to "cast" with satisfaction, my companion in the other boat and myself decided to haul up anchor and "go to see the fun," which, at our distance from the scene of conflict, seemed to be growing decidedly monotonous. By this time Mr. Page had drifted fully half a mile to the westward,

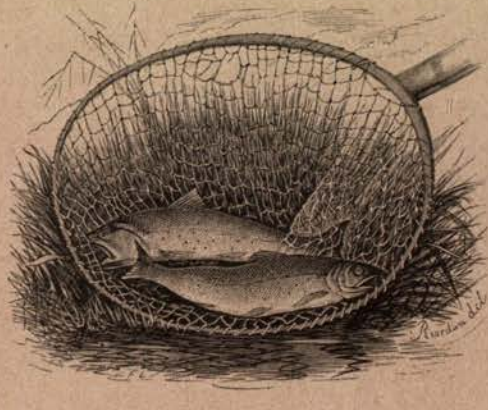
and not once had the trout given any sign of yielding. When we came up with Mr. Page it was quite dark, and the contest, which did not seem so very unequal after all,—for it it was yet doubtful which would get the best of it,—had stretched out to a full hour and a quarter. Then, at last, the trout showed signs of exhaustion, and, yielding to the inevitable pressure of the elastic rod, was once brought near the surface, but not close enough to net. Settling again to the bottom, he had apparently made up his mind to stay there; but the gentle, steady persuasion of the faithful seven-ounce Murphy split bamboo fly-rod again proved too much for him, and, straining his tackle to the utmost, Mr. Page brought his victim gradually toward the surface. The three boats had now come so close together that the fish was shut in on all sides. But it had become so dark that it was difficult to discern objects with any distinctness, and to shed all the light we could upon the puzzling problem which was at last approaching solution, we got together all the matches we had with us, and made in each boat a miniature bonfire. Soon a commotion upon the surface of the water showed that the



BREAKING CAMP.

critical moment had arrived. There, with his back fin as erect as ever, was a magnificent trout, which was soon in the landing-net, and in a moment after in the boat, after precisely an hour and a half of as steady and persistent a fight as a fish ever made for life. But his capture was a full reward for all the time and trouble it had cost, since he weighed by the scale full seven pounds.

This trout and one weighing eight pounds which had been taken by Mr. Crounse were among the magnificent trophies which were carried away from Bema when we broke camp a day or two afterward. And the scene upon that memorable morning was one to which it is difficult to do justice with pen or pencil. There was the batteau laden with all the camp paraphernalia, including the pet dog Prince. As passengers, there were the two leaders of the party, Messrs. Page and Crounse, each with his two boys, while the guides pulled the oars. "Dan" Quimby, the faithful cook and profound philosopher, whose "corn-dodgers" had been in steady demand and in unfailing supply during the whole time of our stay in camp, was starting off for a ten-mile tramp overland to Madrid, leading the cow which he had brought in with him by the same route a month before, and the "spirit of Mooselucmaguntic," stripped of its blanket, seemed to be dancing in wild glee at the prospect of being left in undisturbed possession of his wild domain. Two or three of us remained behind to catch a few more trout, and in the hope of a less boisterous passage to the main camp. After a day or two we followed, taking with us delightful memories of the camp at Bema, and trout enough to excite the envy of the less successful anglers at the other end of the lake.



THE NET RESULT.

BLACK BASS FISHING.

By JAMES A. HENSHALL,

AUTHOR OF "BOOK OF THE BLACK BASS," ETC.

"A GLORIOUS morning for fishing!" said the Professor, as he stepped down from the broad veranda of a stately Kentucky mansion, and out upon the lawn, dashing the dew-drops from the newly sprung blue-grass, as he leisurely strode along in his heavy wading boots.

Professor Silvanus was a man yet in the prime of life, with a full beard, dark gray eyes, and a tall, powerful frame. A well-informed naturalist, a capital shot, and an artistic angler, he had wooed nature in her various moods, in all seasons, and in many lands. Facing the east, he now stood, clad in a quiet fishing suit of gray tweed, surmounted by a broad-brimmed hat of drab felt, the smoke from his briar-root pipe wreathing gracefully above his head like a halo before it was borne away on the early morning air.

Meanwhile, Ignatius, his companion and disciple, was busily engaged in bringing out to the veranda the rods, creels, tackle-cases, landing-nets, lunch-basket, and other necessaries for a day's fishing.

"Luke is coming with the wagon, Professor," said he, as a well-groomed span of bays to a light wagonette came dashing around the corner of the house.

After depositing the various articles in the wagon, Ignatius took the reins, the Professor climbed up beside him with the rod-cases, while the colored man Luke, with a sigh, gave up the ribbons and took a back seat.

The sun was just topping the maples when the impatient team went dashing through the road-gate.

"The bass should rise well to-day," said the Professor.

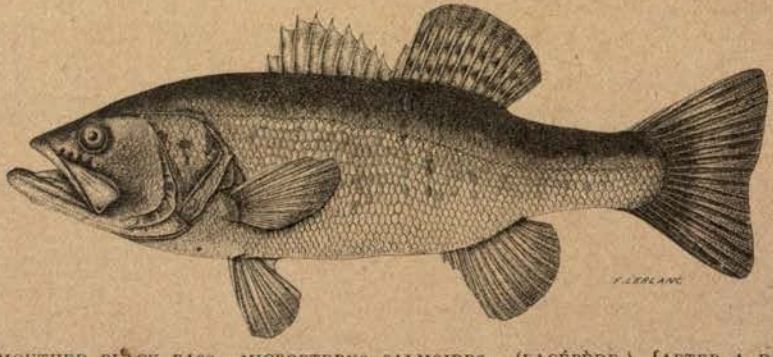
"They are well through spawning, and if the water is right, everything else is propitious," replied Ignatius.

"Mighty perfishus for chan'l cats, too," put in Luke; "'sides yaller bass an' green bass, an' black bass, too; any kind o' bass."

"Professor, how many kinds of black bass are there?" inquired Ignatius, as he lightly touched up the flank of the off horse.

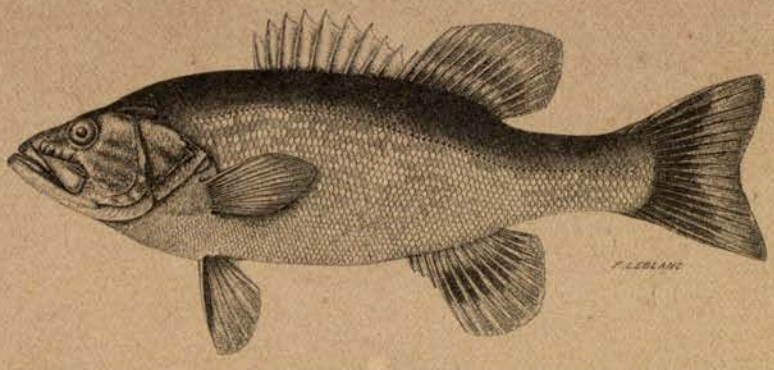
"There are but two species of black bass, and they are as much alike as that span of horses; but from the many different names used to designate them in different parts of the country one would be led to think there were many species."

"Local fishermen say there are three kinds here,—black, yellow, and green bass," asserted Ignatius.



LARGE-MOUTHED BLACK BASS — MICROPTERUS SALMOIDES. (LACÉPÈDE.) [AFTER A DRAWING FROM NATURE BY DR. E. R. COPELAND.]

"There are but two well-defined species, the large-mouthed bass and the small-mouthed bass," continued the Professor, settling himself for a lecture. "There has been more confusion and uncertainty attending the scientific classification and nomenclature of the black bass than usually falls to the lot of fishes, some dozen generic appellations and nearly fifty specific titles having been bestowed upon the two species by naturalists since their first scientific descriptions by Count Lacépède in 1802. Nor has this polyonomous feature been confined to their scientific terminology, for their vernacular names have been as numerous and varied; thus they are known in different sections of our country as bass, perch, trout, chub, or salmon, with or without various qualifying adjectives descriptive of color or habits."



SMALL-MOUTHED BLACK BASS — MICROPTERUS DOLOMIEU. (LACÉPÈDE.) [AFTER A DRAWING FROM NATURE BY DR. E. R. COPELAND.]

"Yes," assented Ignatius, "I have heard them called black perch, yellow perch, and jumping perch up the Rockcastle and Cumberland rivers, and white and black trout in Tennessee."

"Exactly," returned the Professor. "Much of the confusion attending the common names of the black bass arises from the coloration of the species, which varies greatly, even in the same waters; thus they are known as black, green, yellow, and spotted bass. Then they have received names somewhat descriptive of their habitat, as, lake, river, marsh, pond, slough, bayou, moss, grass, and Oswego bass. Other names have been conferred on account of their pugnacity or voracity, as tiger, bull, sow, and buck bass. In the Southern States they are universally known as 'trout.' In portions of Virginia they are called chub, southern chub, or Roanoke chub. In North and South Carolina they are variously known as trout, trout-perch, or Welshman; indeed, the large-mouthed bass received its first scientific specific name from a drawing and description of a Carolina bass sent to Lacépède, under the local name of trout, or trout-perch, who accordingly named it *salmoides*, meaning trout-like, or salmon-like."

"How do you account for the ridiculous practice of applying such names as trout and salmon to a spiny-finned fish of the order of perches?" asked Ignatius.

"They were first given, I think, by the early English settlers of Virginia and the Carolinas, who, finding the bass a game fish of high degree, naturally gave it the names of those game fishes *par excellence* of England, when they found that neither the salmon nor the trout inhabited southern waters. In the same way the mis-

nomers of quail, partridge, pheasant, and rabbit have been applied, there being no true species of any of these indigenous to America."

"Then, I should say the names are a virtual acknowledgment that they considered the black bass the peer of either the trout or salmon as a game fish," said Ignatius.

"As an old salmon and trout fisher," replied the Professor, "I consider the black bass, all things being equal, the gamiest fish that swims. Of course, I mean as compared to fish of equal weight, and when fished for with the same tackle, for it would be folly to compare a three-pound bass to a twenty-pound salmon."

"The long list of local names applied to the black bass," resumed the Professor, "is owing chiefly to its remarkably wide geographical range; for while it is peculiarly an American fish, the original habitat of one or other of its forms embraces the hydrographic basins of the great lakes, the St. Lawrence, Mississippi, and Rio Grande rivers, and the entire water-shed of the South Atlantic States from Virginia to Florida; or, in other words, portions of Canada and Mexico, and the whole United States east of the Rocky Mountains, except New England and the sea-board of the Middle States. Of late years, it has been introduced into these latter States, into the Pacific slope, England, and Germany."

Reaching the summit of a hill after a long but gentle ascent, the river was disclosed to the view of the expectant anglers. At the foot of the descent was an old covered bridge which spanned a somewhat narrow but beautiful stream, winding in graceful curves among green hills and broad meadows. The ripples, or "riffles," sparkled and flashed as they reflected the rays of the bright morning sun, while the blue and white and gray of the sky and clouds were revealed in the still reaches and quiet pools as in a mirror. Driving through the time-worn and old-fashioned bridge with its quaint echoes, our friends left the turnpike and proceeded down a narrow road, following the course of the river to a small grove of gigantic elms, beeches, and sycamores, where a merry little creek mingled its limpid waters with the larger, but more pellucid, stream.

While Luke unharnessed the horses and haltered them to the low limb of a beech, the Professor and Ignatius went up the creek, with the minnow-seine and bucket, and soon secured a supply of chubs and shiners for bait. The Professor then took from its case

NEAR THE RIVER.

and put together a willowy and well-made split bamboo fly-rod, eleven feet long, and weighing just eight ounces. Adjusting a light, German-silver click reel, holding thirty yards of waterproofed and polished fly-line of braided silk, to the reel-seat at the extreme butt of the rod, he rove the line through the guide-rings, and made fast to it a silkworm-gut leader six feet in length, to the end of which he looped, for a stretcher or tail fly, what is known, technically, as the "polka," with scarlet body, red hackle, brown and white tail, and wings of the spotted feathers of the guinea-fowl; three feet above this, he looped on for dropper or bob fly, a "Lord Baltimore," with orange body, black wings, hackle and tail, and upper wings of jungle-cock, both very killing flies, and a cast admirably suited to the state of the water and atmosphere.

Meanwhile, Ignatius, who was a bait-fisher, jointed up an ash and lance-wood rod of the same weight as the Professor's, but only eight and a quarter feet in length, and withal somewhat stiffer and more springy. He then affixed a fine multiplying reel, holding fifty yards of the smallest braided silk line, to which, after reeving through the rod-guides, he attached a sproat hook, No. 1½, with a gut snell eight inches long, but without swivel or sinker, for he intended fishing the "riffles," which is surface fishing principally.

Slinging their creels and landing-nets, they were about to depart, when Luke spoke up:

LUKE.

"Mars' Nash, will you please, sah, gib me one ob dem sproach hooks I heerd you all talkin' 'bout las' night; mebbe so I'll hang a big chan'l cat w'ile you're gone."

Ignatius, who was fastening the strap of a small, oblong, four-quart minnow-bucket to his belt, gave him several large-sized sproat hooks, saying:

"There, Luke, you will not fail to hook him with one of these, and the Professor will guarantee it to hold any fish in the river."

"Right," affirmed he; "the sproat is the hook beyond compare, the *ne plus ultra*, the perfection of fish-hooks in shank, bend, barb, and point."

While the Professor and Ignatius proceeded down the river, Luke rigged up a stout line the length of his big cane pole, a large red and green float, a heavy sinker, and one of the No. 3–0 sproat hooks. He then turned over the stones in the creek until he obtained a dozen large craw-fish, which were about to shed their outer cases, or shells, and which for this reason are called "shedders," or "peelers."

"Now, den," said he, "we'll see who'll ketch de mos' fish. Umph! I wunder wat de 'Fessor do if he hang a big chan'l cat wid dat little pole!"

He then baited his hook with a "soft craw," seated himself on a log at the edge of a deep pool, or "cat-hole," and began fishing.

The Professor and Ignatius took their way down-stream a short distance to where a submerged ledge of rocks ran nearly across the river, some two feet below the surface and about ten feet in width. The line of rock was shelving, or hollow underneath on the up-river side, the water being some six feet deep just under and above it, but shoaling gradually up-stream. The ledge was surmounted on its lower edge by a line of loose rocks which cropped up nearly to the surface, producing a rapid, or riffle. On the opposite side of the stream the bank was quite high and steep, forming a rocky, wooded cliff, where the snowy dogwood blossoms and the pink tassels of the redbud lit up the dark mass of foliage which was yet in shadow; for the sun was just peeping curiously over the top of the cliff, and shining full in their faces—for prudent anglers always fish toward the sun, so that their shadows are cast behind them.

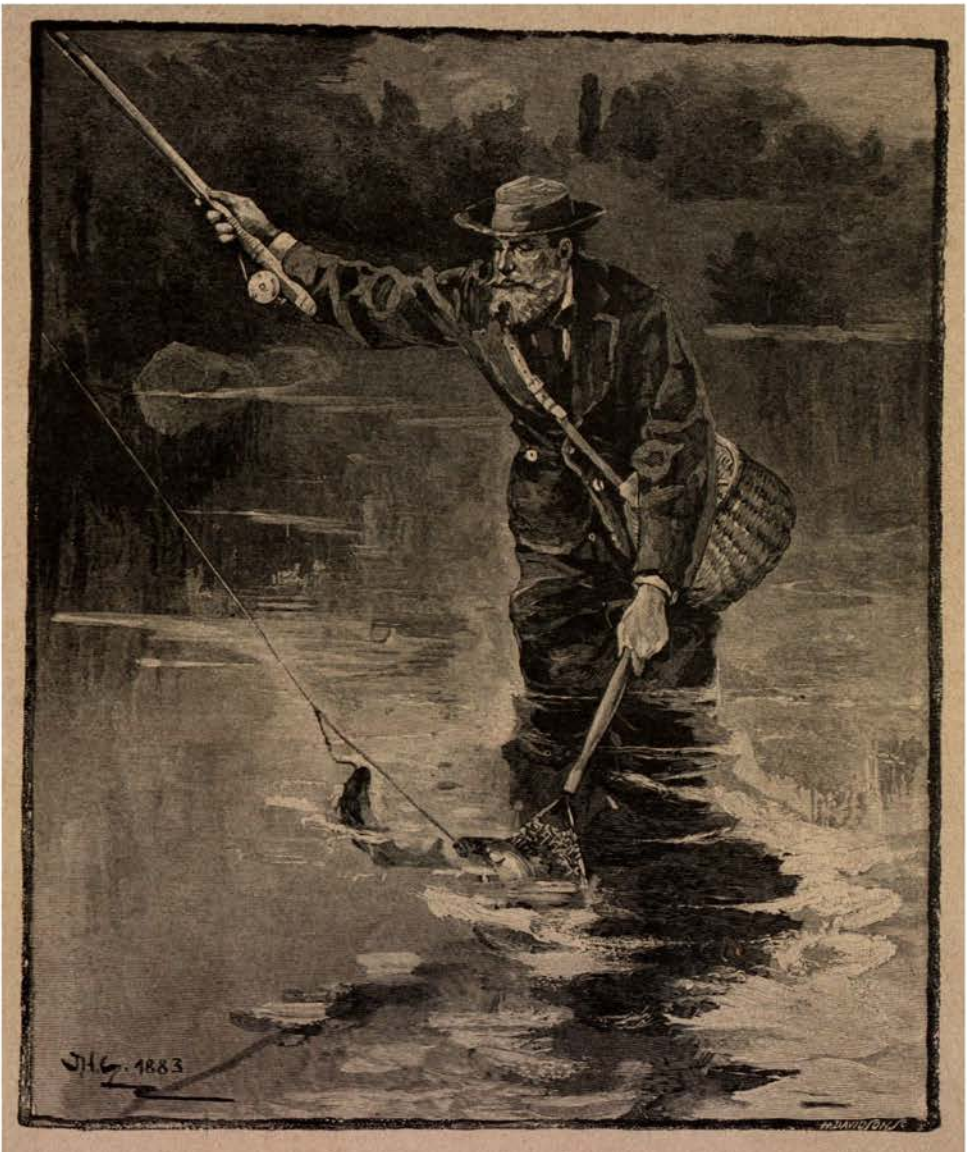
"Now," said the Professor, as he waded out into the stream some fifty feet above the rocky ledge, "the bass have left the cool depths beside the rock and are on the riffle, or just below it, enjoying the welcome rays of the sun while waiting for a stray minnow or craw-fish for breakfast. I'll drop them a line."

So saying, he began casting, lengthening his line at each cast, —the line, leader, and flies following the impulse of the flexible rod in graceful curves, now projected forward, now unfolding behind him,—until the flies, almost touching the water full seventy feet in his rear, were, by a slight turn of the wrist and fore-arm and apparently without an effort, cast a like distance in front, where they dropped gently and without the least splash just on the lower edge of the rift. Immediately the swirl of a bass was seen near

the dropper-fly; the Professor struck lightly, but missed it, for he was taken somewhat unawares and failed to strike quickly enough. Throwing his line behind him, he made another cast, the flies dropping, if possible, more lightly than before, and with a somewhat straighter and tighter line.

"I have him!" he exclaimed, as a bass rose and snapped the stretcher-fly before it fully settled on the water. "He hooked himself that time, the line being perfectly taut. He's not a large one, though he gives good play," he continued, as he took the rod in his left hand and applied his right to the reel, the bass, in the meantime, having headed up-stream to the deeper water beside the rock.

"No, no, my fine fellow, that will never do," said he, as he brought the full strain of the fish on the rod by turning the latter over his shoulder and advancing the butt toward the struggling bass, which had made a desperate and quick dash to get under the rock when he found himself in deep water. This "giving the butt," as it is technically termed, brought him to the surface again, when he instantly changed his tactics by springing two feet into the air, shaking his head violently in the endeavor to dislodge the hook, and as he fell back with a loud splash he dropped upon the line, by which maneuver he would have succeeded in tearing out the hook had the line still been taut; but the Professor was perfectly familiar with this trick, and had slackened the line by lowering the tip of the rod as the bass fell back, but instantly resumed its tension by again raising the tip when the fish regained his element. As the Professor slowly reeled the line, the bass dashed hither and yon at the end of his tether, but all the time working up-stream and toward the rod. Then he was suddenly seized by an impulse to make for the bottom, to hide under a rock, or mayhap dislodge the barb or foul the line by nosing against a stone or snag—but not to sulk; for be it known a black bass never sulks, as the salmon does, by settling motionless and stubbornly on the bottom when he finds his efforts to escape are foiled. The bass resists and struggles to the last gasp, unless he can wedge himself beneath a rock or among the weeds, where he will work the hook out at his leisure. The Professor, keeping the line constantly taut and the rod well up, thereby maintaining



THE PROFESSOR LANDING A DOUBLE.

(DRAWN BY J. H. COCKS.)

a springy arch, soon reeled the bass within a few feet, when he put the landing-net under him. Then addressing Ignatius, he said:

"The humane angler always kills his fish as soon as caught by severing the spinal cord at the neck with a sharp-pointed knife, by breaking the neck, or by a smart blow on the head. Then raising the gill-cover, he bleeds the fish by puncturing a large venous sinus, which shows as a dark space nearly opposite the pectoral fin. Killing and bleeding a fish is not only a merciful act, but it enhances its value for the table, rendering the flesh firmer, sweeter, and of better color."

Ignatius was capable of admiring the Professor's humanity, but he was most attracted by his wonderful skill. His grace and deliberation, though natural and inborn to a certain degree, were chiefly the result of many years' devotion to the rod and gun and the practical study of the habits of fish and game. There is more symmetry of form and natural grace of motion among the aboriginal races of the world, trained to the pursuit of animals on land and water from childhood, than among the civilized and enlightened; our brains are developed and fostered at the expense of our bodies; therefore, the nervous, jerky, impatient, and impetuous man will never make a truly successful angler nor a really good shot, though he may attain to a certain mediocrity in both sports.

At the next cast the Professor fastened a two-pound bass to the "polka," and while giving him play another bass of the same weight took the "Lord Baltimore." As these fish kept down-stream, the full force of the current was an additional factor of resistance to the rod, which seemed to Ignatius to bend nearly double, and caused him to say:

"You will have a hard time to land them both, Professor!"

"Not necessarily, for although the weight is greater, they, together, will not play much longer than a single fish, if so long; for they are pulling against each other. It only remains for me to hold them by the spring of the rod and let them fight it out."

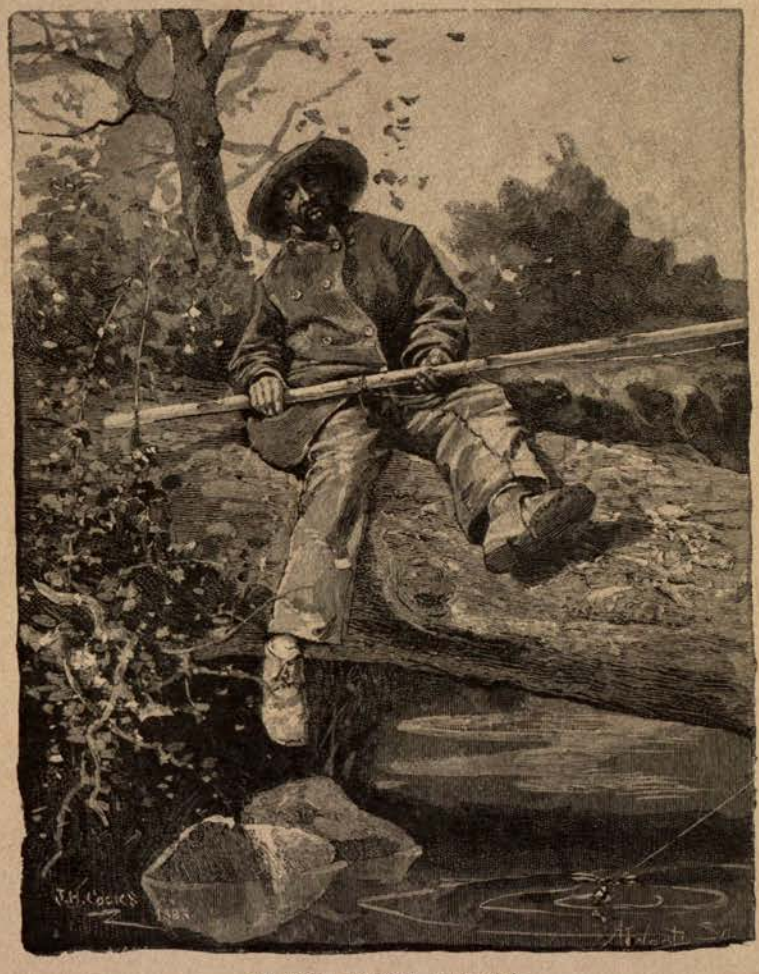
His method of landing them was unique: Holding the net a few inches beneath the surface, he first drew in the bass on the stretcher-fly; then, as he turned up the lower or down-river half of the net-rim to the surface, he let the bass on the bob-fly drop back with the current into it, and lifted out both.

Ignatius proceeded farther out into the stream, but parallel with the shelving rock. Then selecting a minnow four inches long, he passed the hook through the lower lip and out at the nostril. Reeling up his line to the snell of the hook, and with his thumb on the spool of the reel, he turned his left side to the riffle below; then swinging his rod to the right, the minnow nearly touching the water, he made a sweeping cast from right to left and from below upward, starting the minnow on its flight just before the tip of the rod reached its greatest elevation, by relaxing somewhat the pressure of his thumb on the spool, but still maintaining a certain light and uniform pressure to prevent the reel from back-lashing and the line from overrunning; the minnow was neatly cast, in this way, some seventy-five feet, and just beyond the riffle. Then he reeled slowly, keeping the minnow near the surface (there being no sinker), and just as it was passing through the broken water of the riffle, a bass seized it on the run and continued his rush up-stream toward deep water. Ignatius reeled his line rapidly until he felt the weight of the fish, which then gave a short tug or two, when he was allowed to take a few feet of line, though grudgingly and sparingly, so as to keep it taut. Ignatius then, feeling the bass pull steadily and strongly, drove in the steel by a simple turning over of the rod-hand, while drawing firmly on the line; this set the hook.

The bass continued his race by swimming rapidly between Ignatius and the shore and then up the river, describing a half circle, the line being the radius. The bass, finding his progress thus stayed, sprang clear of the water several times in quick succession; but Ignatius, instead of slackening the line, skillfully turned the bass over in the air by a slightly increased tension as it left the water, thus preventing, by another method, his falling across the taut line. This latter mode requires more adroitness than the plan used by the Professor, of lowering the tip of the rod to slacken the line as the fish falls back, but it can be more successfully and safely accomplished with the shorter and stiffer minnow-rod than with the fly-rod. The bass was sooner exhausted and brought to creel than if he had been down-stream, not having the strength of the current to aid him.

"That is the best fish yet taken, Ignatius," said the Professor; "he will scale fully three pounds, and you landed him in two minutes."

"One should hold hard and kill quick."



AN IDEAL "STILL FISHER."

"With a qualification as to the rod, that is the true principle," returned the Professor. "With a properly made, light, and flexible rod, yes; with a bean-pole, no. With a well balanced, supple rod of eight ounces, a pound bass, even in swift water, can be easily killed in a minute, and one of five pounds in five minutes."

The Professor and Ignatius, having each taken a dozen bass, reeled up their lines and retraced their steps toward the wagon for luncheon. Turning a bend in the river, they came in sight of Luke, still sitting on the log with a firm hold on the rod, but sound asleep.

"Behold the ideal still-fisher!" observed the Professor.

Suddenly the float disappeared, the point of the rod was violently pulled into the water, and Luke, awakening, took in the situation, and with a savage jerk, struck a large fish which threatened to pull him from his perch. Indeed, he was forced to follow it into the water to save his tackle.

Luke, seeing them approaching, cried out appealingly:

"Wat I gwine to do wid dis fish?"

"Keep your pole up, and lead him out to the shallow water."

Finally, after a few minutes more of great effort, and much floundering of the fish, he succeeded in getting the fish into shallow water, and drew it out on the shore, a channel cat-fish, weighing fully ten pounds.

"I got de boss green bass, too, Mars' Nash," said he, as he drew his fish-string out of the water and displayed a large-mouthed bass of four pounds.

"And the only large-mouthed bass caught this morning," said the Professor. "Now, Ignatius," he continued, "lay it side by side with your heaviest small-mouthed bass, and you will readily see the principal points of difference. In the first place, Luke's fish is more robust, or 'chunkier,' yours being more shapely and lengthy. Then Luke's bass has much the larger mouth, its angle reaching considerably beyond or behind the eye, while in yours it scarcely reaches the middle of the eye; thus it is they are called large and small-mouthed bass. Then the scales of Luke's fish are much larger than those of yours, for if you count them along the lateral line you will find only about sixty-five scales from the head to the minute scales at the base of the caudal fin, while there are about seventy-five on either of your small-mouthed bass. You also observe that the scales on the cheeks of Luke's fish are not much smaller than those on its sides, while on your fish the cheek scales are quite minute as compared with those on its body.

"As for Luke's big-mouthed bass," continued the Professor, "I've taken them in Florida weighing about fourteen pounds. I used a ten-ounce rod for those big fellows; I could have killed them with this little rod by taking more time and muscle, and uselessly prolonging the struggles of the fish, but I deem that unsportsmanlike."

"I've heard," said Ignatius, "that most of the Florida bass are taken with the hand-line and trolling-spoon."

"That is the way most Northern tourists usually take them, because they don't know how to handle a rod; and then, the necessary tackle for hand-trolling can be carried in the pocket. It is the simplest mode of angling, if it can be dignified by that name, for it is more suggestive of meat, or 'pot,' than sport. The pseudo-angler sits in the stern of a boat with a stout line, nearly the size of an ordinary lead-pencil and about seventy-five yards long, to the end of which is attached a spoon-bait or trolling-spoon, with one or two small swivels. When the boatman rows the boat slowly and quietly along the trolling-spoon, revolving swiftly beneath the surface at the end of fifty yards of line, glittering and flashing in the sunlight, is eagerly seized by the bass as it passes near his lair, when one or more of the hooks attached to the spoon are fixed in his jaws. While there is a certain amount of excitement in hauling in the struggling bass by 'main strength and stupidity,' as the mule pulls, there is not the faintest resemblance to sport, for there is no skill required in the manipulation of the line or bait or in handling the fish when hooked."

"Do they troll with the hand-line, too?" asked Ignatius.

"Not many of them; they use a long rod or pole for still-fishing, skittering, and bobbing."

"What are skittering and bobbing?"

"Bobbing has been practiced in Florida for more than a century, and is a very simple but remarkably 'killing' method of fishing. The tackle consists of a long cane or wooden rod, two or three feet of stout line, and the 'bob,' which is formed by tying three hooks together, back to back, and covering their shanks with a portion of a deer's tail, somewhat on the order of a colossal hackle-fly; strips of red flannel or red feathers are sometimes added; all together forming a kind of tassel, with the points of the hooks projecting at equal distances. The man using the bob is seated in the bow of a boat, which the boatman poles or paddles silently and slowly along the borders of the stream or lake, when the fisher, holding the long rod in front of him, so that the bob is a few inches above the surface, allows it to dip or 'bob' at frequent intervals in the water, among the lily-pads, deer-tongue, and other aquatic plants that grow so luxuriantly in that sub-tropical region. The bass frequently jumps clear of the water to grab the bob, but

usually takes it when it is dipped or trailed on the surface. Deer hair is very buoyant, and the queer-looking bob seems like a huge, grotesque insect, flying or skimming along the clear, still waters.

"Skittering," continued the Professor, "is practiced with a strong line about the length of the rod, to which is affixed a small trolling-spoon, a minnow, or a piece of pork-rind cut in the rude semblance of a small fish. The boat is poled along, as in 'bobbing,' but farther out in the stream, when the angler, standing in the bow, 'skitters' or skips the spoon or bait over the surface just at the edge of the weeds. Skittering is a more legitimate method of angling than bobbing, for with the longer line the bass gives considerable play before he can be taken into the boat; and as this manner of fishing is usually done in shallow waters abounding in moss, grass, and weeds, the fish must be kept on the surface and landed quickly.

"Ignatius, you should become a fly-fisher," added the Professor. "Your style of bait-fishing is admirably suited to the Northern lakes and the deep rivers, where, indeed, it is the favorite method with the best anglers, though a small swivel or sinker is necessary to keep the minnow beneath the surface. But on such a charming, rapid, and romantic river as this, the artificial fly alone should be used. This afternoon, when the sun is low in the west, bass will again rise to the fly, and if you like we will try them again."

And now, while the Professor and Ignatius are talking of other matters over their pipes, we will conclude by wishing "good luck" to the entire fraternity of anglers, from him of the æsthetic fly to him of the humble worm, but with a mental reservation as to him of the hand-line and spoon.

J. C. Beard Del

IN THE HAUNTS OF BREAM AND BASS.

By MAURICE THOMPSON.

I.

DREAMS come true and everything
Is fresh and lusty in the spring.

In groves, that smell like ambergris,
Wind-songs, bird-songs never cease.

Go with me down by the stream,
Haunt of bass and purple bream;

Feel the pleasure, keen and sweet,
When the cool waves lap your feet;

Catch the breath of moss and mold,
Hear the grosbeak's whistle bold;

See the heron all alone
Mid-stream on a slippery stone,

Or, on some decaying log,
Spearing snail or water-frog,

Whilst the sprawling turtles swim
In the eddies cool and dim!

II.

The busy nut-hatch climbs his tree,
Around the great bole spirally,

Peeping into wrinkles gray,
Under ruffled lichens gay,

Lazily piping one sharp note
From his silver-mailèd throat,

And down the wind the cat-bird's song
A slender medley trails along.

Here a grackle chirping low,
There a crested vireo;

Every tongue of Nature sings,
The air is palpitant with wings!

Halcyon prophesies come to pass
In the haunts of bream and bass.

III.

Bubble, bubble flows the stream,
Like an old tune through a dream.

Now I cast my silken line;
See the gay lure spin and shine—

While, with delicate touch, I feel
The gentle pulses of the reel.

Halcyon laughs and cuckoo cries,
Through its leaves the plane-tree sighs.

Bubble, bubble flows the stream,
Here a glow and there a gleam,

Coolness all about me creeping,
Fragrance all my senses steeping,

Spice-wood, sweet-gum, sassafras,
Calamus and water-grass,

Giving up their pungent smells
Drawn from Nature's secret wells;

On the cool breath of the morn
Fragrance of the cockspur thorn.

IV.

I see the morning-glory's curl,
The curious star-flower's pointed whorl.

Hear the woodpecker, rap-a-tap!
See him with his cardinal's cap!

And the querulous, leering jay,
How he clamors for a fray!

Patiently I draw and cast,
Keenly expectant, till, at last,

Comes a flash, down in the stream,
Never made by perch or bream,

Then a mighty weight I feel,
Sings the line and whirs the reel!

V.

Out of a giant tulip-tree,
A great gay blossom falls on me;

Old gold and fire its petals are,
It flashes like a falling star.

A big blue heron flying by
Looks at me with a greedy eye.

I see a stripéd squirrel shoot
Into a hollow maple-root;

A bumble-bee, with mail all rust,
His thighs puffed out with anther-dust,

Clasps a shrinking bloom about,
And draws her amber sweetness out.

Bubble, bubble flows the stream,
Like an old tune through a dream!

A white-faced hornet hurtles by,
Lags a turquoise butterfly,

One intent on prey and treasure,
One afloat on tides of pleasure!

Sunshine arrows, swift and keen,
Pierce the maple's helmet green.

VI.

I follow where my victim leads,
Through tangles of rank water-weeds,

O'er stone and root and knotty log,
And faithless bits of reedy bog.

I wonder will he ever stop?
The reel hums like a humming-top!

A thin sandpiper, wild with fright,
Goes into ecstasies of flight,

Whilst I, all flushed and breathless, tear
Through lady-fern and maiden's-hair,

And in my straining fingers feel
The throbbing of the rod and reel!

Bubble, bubble flows the stream,
Like an old tune through a dream!

VII.

At last he tires, I reel him in;
I see the glint of scale and fin.

I raise the rod—I shorten line
And safely land him; he is mine!

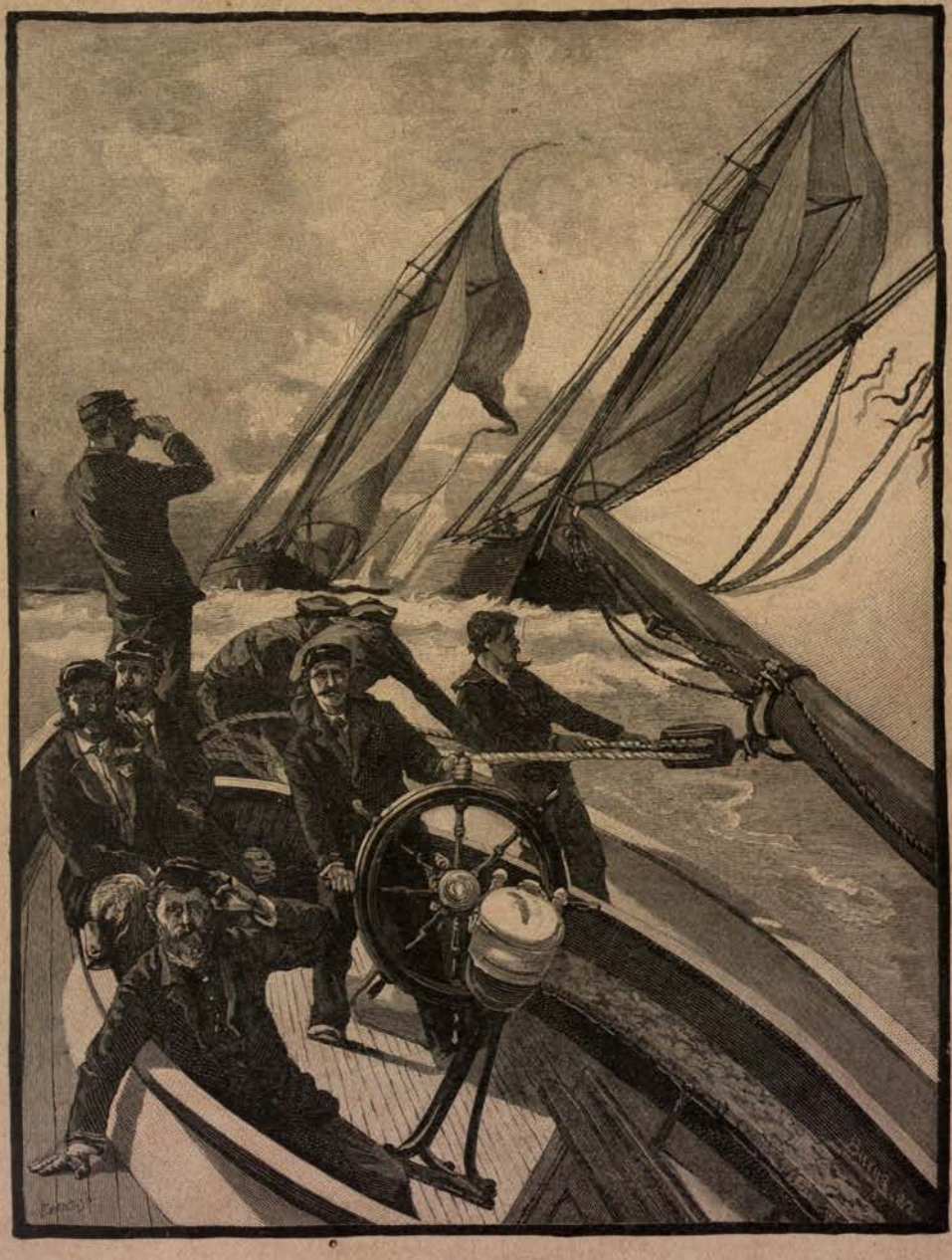
The belted halcyon laughs, the wren,
Comes twittering from its brushy den.

The turtle sprawls upon his log,
I hear the booming of a frog.

Liquid amber's keen perfume,
Sweet-punk, calamus, tulip-bloom,

Glimpses of a cloudless sky
Soothe me as I resting lie.

Bubble, bubble flows the stream,
Like low music through a dream.



SALMON-FISHING.

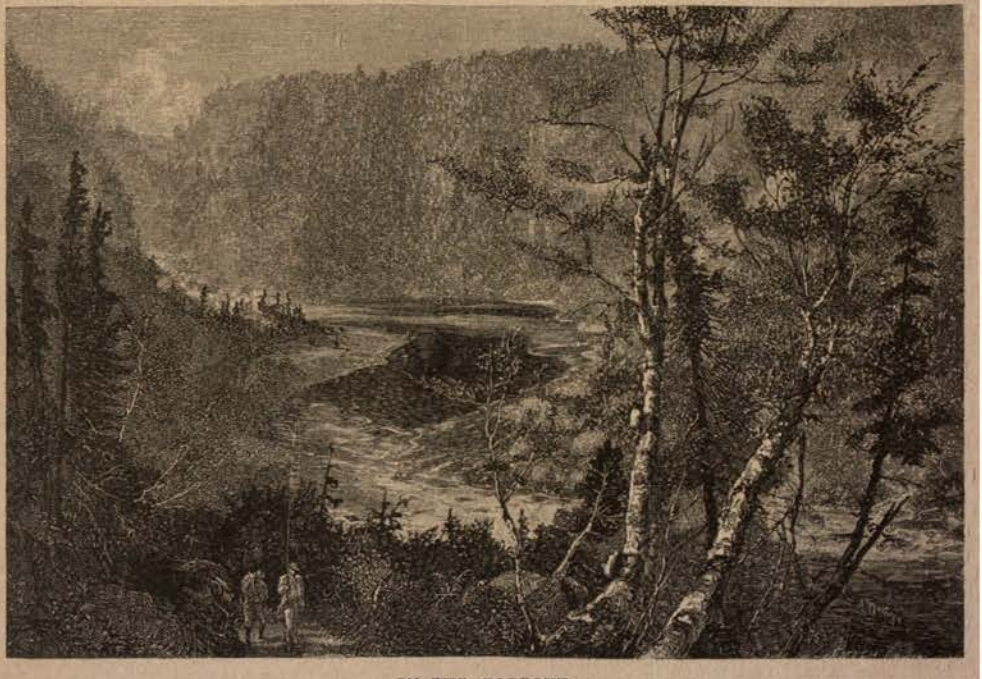
By A. G. WILKINSON.

ALTHOUGH the salmon is the acknowledged king of fishes, and the taking of it the most royal of sports, yet comparatively few indulge in the pastime. There are certainly many, and those too among the foremost men of our country, who concede fully the benefits to be derived, not only from open-air life and exercise, but from having some pursuit or specialty outside of business and profession,— call it hobby, if you will,— which, while it gives rest to certain faculties of the mind, equally exercises and strengthens others. They realize truly that life is better than fame, and sound lungs and good digestion than a fat purse; but the difficulties in the way of taking salmon turn most of these in a different direction for their recreation.

The three principal hinderances to salmon-fishing in this country are: the great trouble in obtaining either a lease of a stream or a permit for the best part of the season; the great distances to be traveled, and consequent loss of valuable time; and the large expense as compared with other sorts of outdoor amusements.

The region where salmon can at the present day be taken, in sufficient numbers to reward one for the attendant trouble and expense, is a circumscribed one. Beginning at Quebec, and following down the river St. Lawrence, the salmon-streams are very numerous upon the northern shore, and extend far away to the Labrador coast. Among them are the well-known Laval, Godbout, Trinity, St. Margaret, Moisic, St. John's, Magpie, Mingan, Great and Little Romaine Rivers.

The range of mountains on the north shore runs within a few miles of the St. Lawrence, and hence the rivers upon that side are very short and rapid, giving but few good pools, and are, as a general thing, very difficult to fish. Only a few good streams are found on the south shore, among which are the Rimouski, Grande Metis, and Matane. Passing down the Gulf of St. Lawrence, we come to the Basin of Gaspé, into which flow three admirable streams; and farther on, upon the north shore of the Bay of Chaleurs, and at its western end, are some of the best, including the famous Restigouche,



ON THE GODBOUT.

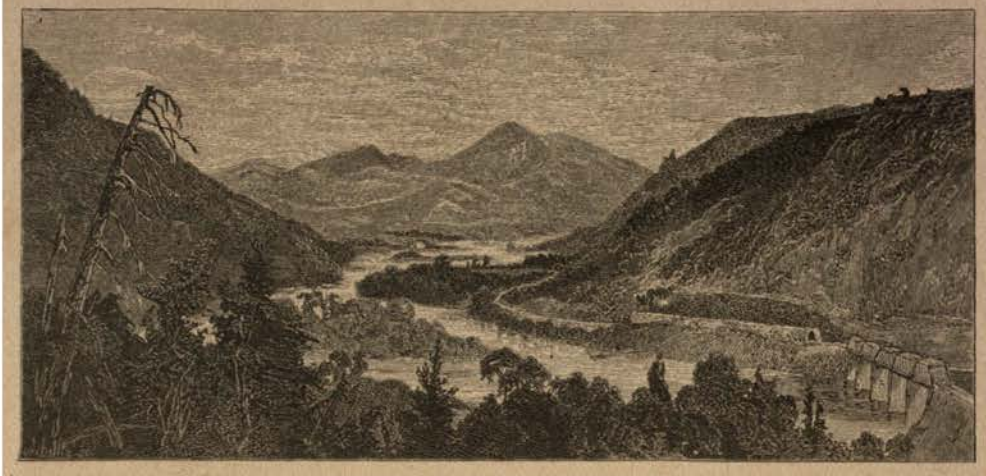
fished yearly by Englishmen who cross the Atlantic for that express purpose; also the Cascapedia, made more noted through Mr. Dawson's charming letters from there, where, at a good ripe age, he took his first salmon. The Nipisiguit on the south shore of the Bay of Chaleurs and the Miramichi on the eastern coast of New Brunswick are the last salmon-streams of any account until we come to Nova Scotia, where there are a few upon its south-east coast below Halifax.

In Cape Breton there is a single good river, the Margarie. Here and there small streams are found in other parts of New Brunswick

JUNCTION OF THE RESTIGOUCHE AND MATAPEDIAC RIVERS.

and in the Island of Anticosti, but practically salmon-angling is confined to the rivers of Canada East and those of the northern part of New Brunswick, which includes the Miramichi.

But few of the rivers we have mentioned debouch near a steamer landing, and all others are difficult of access. To reach these latter the angler must manage in some way to get transportation for many miles over a rough country, where it is difficult to find horses, wagons, or roads; or he must charter a small sailing-vessel and run along a most dangerous coast, carrying with him both canoes and men. The Restigouche and Matapediac are reached with comparative ease from Dalhousie, a landing-place of the Gulf Port steamers. This line of steamers also touches at Gaspé Basin, leaving passengers just at the mouths of the three streams flowing into it. These are the York, St. John, and Dartmouth, called by the natives the South-west, Douglastown, and North-west. These rivers are among the best stocked in Canada. The scenery about them is most varied, and in this respect unlike most other parts of Canada, where one tires of the monotony of mere grandeur and longs for the picturesque. They flow chiefly through deep gorges, or cañons, and between mountains, which occasionally rise to the height of a thousand or fifteen hundred feet. Beautiful lakes, filled to repletion with brook-trout, are found on the high land between the rivers, which for quite a distance flow within a few miles of one another. These streams are very rapid, and in early spring are almost torrents, and yet they have very few falls



THE VALLEY OF THE MATAPEDIAC.

around which a "carry" must be made. Comfortable houses have been erected at some trouble and expense every ten or twelve miles on those parts of the York and St. John which abound in good pools.

The Canadian Government exercises complete control of the principal salmon-streams, both in their tidal and fluvial parts. Leases are commonly given for several years, but occasionally a schedule of vacant rivers is published, giving "upset" or minimum prices at which season permits will be granted. These vary from $20 to $500 in gold. The very fact that such advertisement is made indicates of itself that the rivers are not, for some reason, very desirable. The best rivers are leased for eight or ten years, and upon the likelihood of a vacancy, numerous applicants bring influences to bear to secure the chance at once.

It is understood that as a general thing leases of the better class of streams are not to be given to the "States" people, as they call us of the United States. Our political anglers often remark that it is more difficult to lease a good salmon-stream than to secure an election to Congress. A thousand dollars has been paid for the use of the fluvial part only of a first-class stream for a single season, this including, of course, all the fittings and canoes, etc. Add to the cost of a "permit" the traveling and camping expenses, and the price of good salmon tackle, which is always of the most expensive sort, and you swell the sum-total of a summer trip to quite an amount.

While the Canadians are so tenacious of their leases, and naturally desirous of keeping the best streams for themselves, yet they are most generous and kind to their "States" friends. Often, one is not only accorded a permit to fish, but receives an invitation to make, for the time being, all the accessories and fittings of the stream his own, including houses, canoes, and cooking-utensils. My invitation, some years ago,

CANADIAN SALMON RIVERS AND GASPÉ BASIN.

from that genial sportsman, Mr. Reynolds, of Ottawa, was to make the York river my own, paying simply for my men and provisions. His guests kill every year many salmon to his one, and he enjoys their success far better than his own. An Indian would wish him, in the happy hunting-grounds, the exclusive right of the best stream. We can only express our heartfelt wish that for a score of years to come he may continue yearly to take his 47-pound salmon in his favorite stream.

To the cost of stream and tackle must be added the great uncertainty of getting fish. One may secure the best stream, purchase the best tackle, and travel a thousand miles to no purpose, for *Salmo salar* is a very uncertain fish, and the worst sort of a conundrum. Sometimes he comes early and sometimes late; sometimes he goes leisurely up the rivers, lingering accommodatingly at the pools, and seemingly in good mood for sporting with flies; and sometimes, when kept back by the ice of a late spring, he goes for the head-waters at once, only stopping when compelled by fatigue, and then

having no time to waste upon flies. Last year, with scores of salmon, by actual count, in the different pools, often not more than one in a pool could be tempted to rise to our flies. All these combined causes make the number of salmon-anglers small.

A stream being secured, the selection of tackle is an easy matter. A water-proofed American-made silk line of about three hundred feet, tapering gradually at each end, so that it may, when worn, be changed end for end, is the one generally used in this country. A simple reel with click is the best, and it may be of hard rubber or metal, as preferred. If of metal, it is usually nickel or silver plated. In olden times, the Scotch salmon-angler strapped around his waist a roughly made wooden reel of large size, called a pirn. It was entirely unconnected with the rod, along which the line was carried by rings, beginning quite a distance above the hand. In the old Scotch works upon angling, we read of the gaffer singing out to his laird, "Pirn in! pirn in! you'll be drooned and coot" (drowned and cut), by which he meant, "Reel in, or your line will bag and be cut off by getting around the sharp edges of the rocks."

The Scotch poaching angler suspends by straps under his outer garments a capacious bag of coarse linen for concealing his salmon, while quite innocently he carries in his hand a string of trout. Lord Scrope once caught a poacher with a salmon in his bag, and demanded how it got there. The reply was, "How the beast got there I dinna ken. He must ha' louped intil ma pocket as I war wading."

The leader, of nine to twelve feet nearest the hook, is of the best selected silk-worm gut, which should stand a test of four or five pounds strain. This gut is made by taking the silk-worm just before it begins to spin its cocoon, and soaking it in vinegar some hours. The secreting glands of the worm are at that time filled with the mass of glutinous matter from which the silk of the cocoon is to

be spun. One end of the worm, after it is thus soaked, is pinned to a board, and the other stretched out some eight or ten inches and secured. When this is hardened, it becomes the beautiful white, round gut of commerce, which, when stained water-color, and dropped lightly in the pool, will not be noticed by the fish.

In the matter of rods, the conservative man still clings to a well-made wooden one of greenheart or other approved wood, of which the taper and strength are so accurately proportioned that the addition of but a few ounces at the end of the line carries the main bend or arch nearer the butt end. Those who are not so conservative, and who are fond of lessening in every practicable way the somewhat tedious labor of casting the fly, choose a rod of split bamboo, which weighs about two pounds. My own weighs but twenty-seven ounces, although nearly sixteen feet long. No one will risk himself upon a stream without extra rod, reels, and lines, and if he takes a greenheart and split bamboo, he has two as good rods as are made. One who has long used a heavy wooden rod has at first a feeling of insecurity and a distrust of the slender bamboo, which can, if necessary, be wielded by a single strong arm. It is said an old Scotchman, handling one of these rods for the first time, exclaimed: "Do ye ca' that a tule to kie a saumont wi'? I wad na gie it to my bairnies to kie a gilsie wi'." It should be explained that a grilse is a young salmon just returned from a first trip to the sea. After its second trip, it returns a salmon proper, with all the characteristic markings. It often happens that a grilse (called by the Scotch "gilsie," or salmon-peel) is larger than a salmon one or two years older, the varieties differ so in size. The young of the salmon are first called parrs, and have peculiar spots and dark bars, or "finger-marks," as they are called. At eighteen months, they are some six inches long, and the following spring silver scales grow over the bars and spots, when they are called smolt, retaining that name until they go to sea. For a long time the parr was held to be a species of trout, and entirely distinct from salmon. Lord Scrope, the author of "Days and Nights of Salmon-Fishing," a work now extremely rare, held long and animated discussions with James Hogg, the "Ettrick-Shepherd," upon this subject, which was settled practically by a Mr. Shaw, of Drumlanrig, who tagged a parr and identified it again as a full grown salmon in 1836.

IN THE HARBOR OF ST. JOHN.

The manufacture of a fine rod of split bamboo is a work requiring great skill and judgment, not unlike that required to make the far-famed Cremona violin. The rods are made usually from Calcutta bamboo, as it has a larger proportion of enamel with tough fiber and long growth between joints. In the Japanese bamboo, the fibers follow the joints too closely, and so must be cut into in straightening the pieces. Our American cane is lighter, and the enamel is very hard and elastic, but the inner woody fiber is soft as well as brittle. Sometimes several invoices of Calcutta cane will not contain one suitable piece for rod-making. The canes mildew on the passage, and this injures the fibers. Sometimes they are injured in being straightened over a fire, and often a single worm-hole ruins the entire piece. Just as our forest trees have the thickest and roughest bark on the north side, so the bamboo has thicker and harder enamel upon whichever side was exposed to storms. In making fine rods not only the best cane is selected, but the best side of this selected cane is preferred.

The split bamboo rod is an instance in which nature is successfully improved. The cane in its natural growth has great strength as a hollow cylinder, but it lacks the required elasticity. The outer surface or enamel is the hardest of vegetable growth, and is made up largely of silica. The rod-maker, by using all of the enamel possible, and by his peculiar construction avoiding the central open space, secures great strength with lightness, and nearly the elasticity of steel itself.

In making a rod, some ten or twelve feet of the butt of the cane is sawed off and split into thin pieces or strands. These pieces are then beveled on each side, so that when fitted together they form a solid rod of about half the diameter or less of the original hollow cane. This beveling is done with a saw, or a plane if preferred, but more expeditiously by having two rotary saws or cutters set at an angle of 60° to each other, in case the rod is to be of six strands. The strip is fed to the cutters by means of a pattern which, as the small end of the strip approaches, raises it into the apex of the angle formed by the cutters. This preserves a uniform bevel, and still narrows each strand toward its tip end so as to produce the regular decrease in size of the rod as it approaches the extreme end. These strips can also, if desired, be filed to a bevel by placing them in triangular grooves of varying depths in a block of lignum-vitæ. The pieces are then filed down to the level of the block, which is held in a vise during the operation.

The six or twelve strips as required, being worked out, and each part carefully tested throughout its entire length by a gauge, are ready for gluing together, a process requiring great care and skill. The parts should be so selected and joined that the knots of the cane "break joints." The parts being tied together in position at two or three points, the ends are opened out and hot glue well rubbed in among the pieces for a short distance with a stiff brush. A stout cord is then wound around the strands from the end glued toward the other portions, which are opened and glued in turn, say eight or ten inches at a time. A short length only is glued at one time so that slight crooks in the pieces can be straightened, and this is done by bending the rod and sliding the pieces past each other. During the gluing all inequalities and want of symmetry must be corrected or not at all, and so the calipers are constantly applied to every side

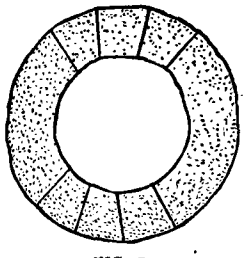


FIG. 1.

at short intervals, and any excess of thickness corrected by pressing the parts together in a vise. Figure 1 shows a section of a length of bamboo cane from which the strips indicated by spaces marked off are to be sawed. Figure 2 is an end view of the six strands properly beveled and glued together. This length or joint of the rod is made up of six sectors of a circle whose diameter is greater than that of the rod, and hence it is necessarily what in common parlance might be called six-cornered. Figure 3 is an end view, natural size, of a six-stranded salmon-rod tip at its larger end; and Figure 4 is a longitudinal view of a piece of a Leonard trout-rod tip of *twelve strands* now lying before me. This figure gives the size as accurately as the calipers can determine it, and shows what vast amount of skill, patience, and untiring industry is required in the art we have been describing.

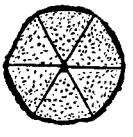


FIG. 2.

The ferrules are water-tight and expose no wood in either the socket or the tenon part. Bamboo is so filled with capillary tubes that water would be carried through the lengths and unglue them, if it could once reach the ends where the joints of the rod are coupled together; hence the necessity of careful protection at this place. The entire rod when finished is covered with the best copal coach varnish. By taking care to renew the varnish from time to time, no water need ever get to the seams.

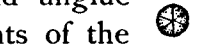


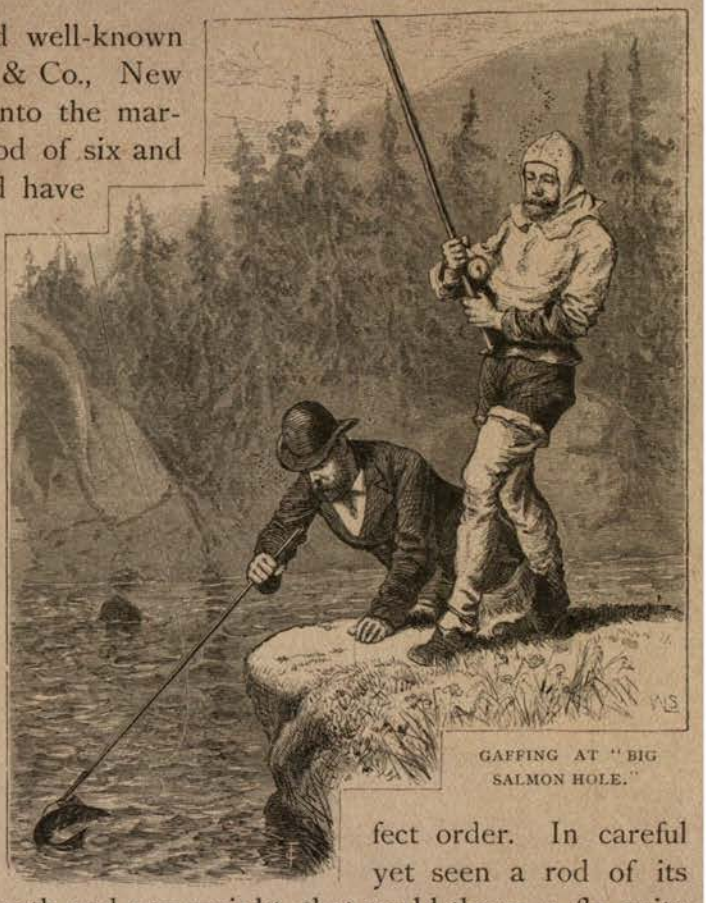
FIG. 3.

FIG. 4.

In spite of the prejudice against what has been called a gentleman's parlor rod, they have steadily gained in favor. Twenty-five years ago, a London firm made split-bamboo rods, putting the enamel inside.* Naturally enough, with the soft part of the cane exposed to wear and weather, and nearly all the enamel sacrificed, they did not find favor in the eyes of thoughtful or scientific anglers, at least. Mr. Phillippi, living at Easton, Pa., conceived the idea, in 1866, of putting the enamel upon the outside, where it would do the most good. Next, Mr. Green and Mr. Murphy put their heads together, and made rods of this sort of four strands,

* See "The Split Bamboo Rod—Its History, etc.," by Mr. William Mitchell, in this book.

and finally the old well-known firm of A. Clerk & Co., New York, introduced into the market the Leonard rod of six and twelve strands, and have since been supplying Europeans with all they get of this article.*



GAFFING AT "BIG SALMON HOLE."

I have taken not a little pains to get, as far as possible, a correct history of this somewhat remarkable invention. My own rod of this kind has been used in both rain and shine for several seasons, and is now in perfect order. In careful tests, I have never yet seen a rod of its weight, or of its length and any weight, that could throw a fly quite as far; and, light as it is, it brought last year to gaff in twenty minutes a thirty-five pound fish, which my friend Curtis gaffed for me, off the high rock at the "Big Salmon Hole" of the York. Any rod with which one has killed many and large fish is, naturally, held to be perfection upon the stream; but the rod we have been describing is beautiful as an *objet de vertu*, and in the library becomes a source of joy to every admirer of skilled workmanship, though he be not familiar with its use.

This illustration shows the angler who has kept just strain

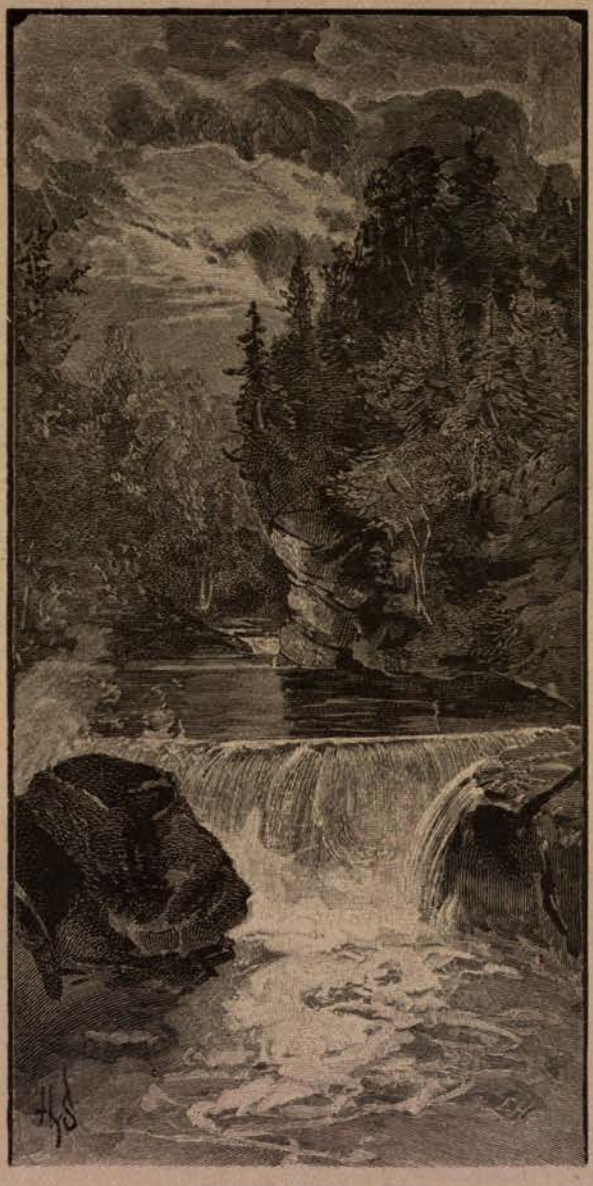
* [I have seen a split bamboo rod made, according to the suggestions of that distinguished angler, the late James Stevens, of Hoboken, by Blacker, of London. This rod is of three sections, with the enamel on the outside, and was made in 1852 while Mr. Stevens was in London. This date has been accurately determined for me by his son, Mr. Frank Stevens. — EDITOR.]

enough on the rod to prevent the hook from dropping out of the mouth of the fish,—which measured forty-eight inches in length, —while his friend, after having skillfully hooked him with a prodigiously long gaff, is drawing him forward so as to use both hands in lifting him upon the rock. As some of our skillful surgeons perform even the delicate operation for a cataract equally well with either hand, so must the successful salmon-angler become ambidextrous. In casting he must be able, of course, to use either hand forward at will, and when one arm has become lamed by holding the rod, as it rests against the waist in playing a fish, and takes nearly all the strain while the other manipulates the reel, he must be able to change the position of the reel upon the rod, and work it with his left hand while his right manages the rod. This left-handed arrangement is shown in the figure with the reel on top in its proper position, and the right hand taking all the strain.

The scientific angler, as soon as the fish is hooked, turns his rod over and brings his line uppermost, so that it hugs and strains the rod equally at every inch of its length, leaving to the rings their proper function of simply guiding the line.

Having, through Mr. Curtis's kindness, received an invitation from Mr. Reynolds, as already mentioned, to fish his river, the York, accompanied by any friend whom I might select, I provided myself with a Norris greenheart and a Leonard bamboo in the way of rods, and with an assortment of proper flies.

It is, however, in the selection of friends to accompany us that we find the greatest difficulty connected with a projected excursion for salmon. One may have plenty of friends who would make camp-life delightful, and whose presence at the festive board "would make a feast of a red herring"; but they cannot be ordered for a trip, like tackle. Your choice must, as a matter of course, be very much restricted. You will never trust yourself in camp with your best friend unless you have seen him under fire; that is to say, unless you know how he will stand the thousand and one annoyances incident to long journeys with poor conveyances and still poorer hotels; with black flies, sand-flies, mosquitoes, fleas, and worse. The best companion of the library, the drawing-room, and the watering-place, although possessed of the most kindly attributes, oftentimes becomes absolutely unendurable when quartered for a day or two on the banks of a Can-



A CANADIAN FISHING RIVER.

adian river, with limited cuisine, unlimited numbers of insects, and poor luck at angling. Never go with one who is painfully precise, and who wishes to have everything his own way and at once. Such a man might as well stay away from Gaspé, where the natives always have their own way, and never, under any circumstances, hurry. Never go with one who is over-excitable or enthusiastic, for it isn't

just the thing to have a man standing on his head in a birch-bark canoe every time he gets "a rise," or the canoe takes a little water running down rapids. The experienced angler chooses a friend who is deliberate, and takes all ills philosophically, and, if possible, one with that fortunate disposition which permits him to keep both his head and his temper under all circumstances. Other things being equal, he selects an admirer and follower of Brillat-Savarin, for he has ever remarked that one who fully enjoys and appreciates the best of dinners is just the one to endure with equanimity the worst, if no better is attainable.

To be eighteen miles from the main camp when fish are rising as fast as they can be killed, and to have but three pieces of pilot-bread for the angler and his two men, and to be forced to go without supper and breakfast, or else give up the sport and return, will bring the bad out of any man if it is in him.

Your companionable angler need not always take things quite as coolly as did a well-known editor who, once upon a time, while engaged in pulling in a blue-fish, after sawing his fingers with a hundred or more feet of line, was seized with hunger and fatigue, and, taking a hitch about a cleat, satisfied his inner man with sardines and crackers. To the surprise of all his companions, after finishing his lunch and resting his fingers, he pulled in the fish, which had swallowed the hook so far down that it had to be cut out. Of course, the first few feet of the line which he used was wired so that it could not be bitten off.

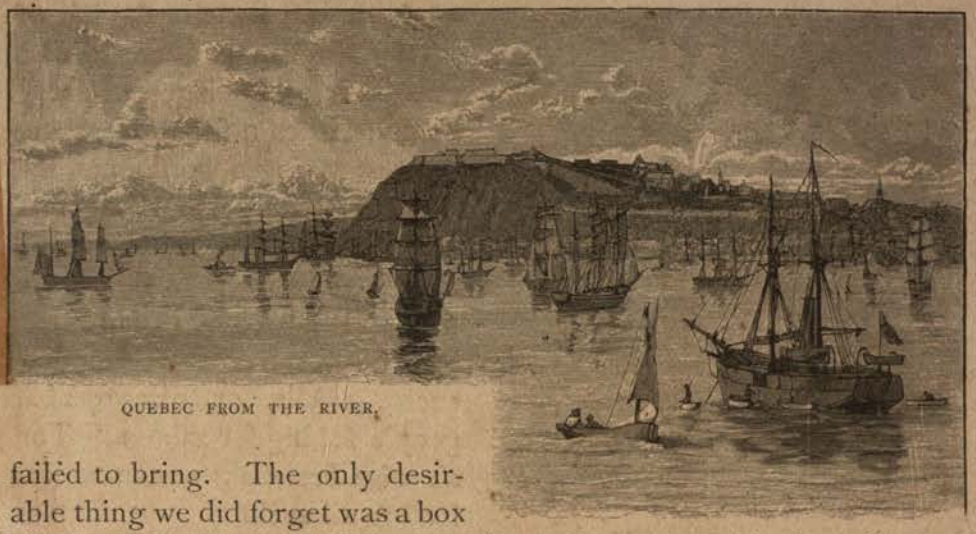
THE PHILOSOPHICAL ANGLER.

OUR ENGLISH FRIEND.

Here is a sketch from life of a jolly English gentleman, who gets thoroughly disgusted every time he loses a fish. He then, without saying a word, quits the business, puts his back against a smooth tree, and takes a short nap, leaving others to thrash the pools. It is worthy of note that one need never fear meeting snobs, swells, or disagreeable people fishing for salmon. The air of a first-class stream seems fatal to all such.

The last of June, 1874, found Mr. Lazell and the writer tired out with close attention to duties, and with barely frame-work enough left "to veneer a decent man upon," rendezvousing at the office of Fred. Curtis, Esq., in Boston, preparatory to setting out for Gaspé Basin, Canada East. An idler cannot appreciate fully the enjoyment we felt in anticipation of several weeks entire freedom from business of any sort. To get so far from civilization that no irascible inventor can find you and argue his case until your head seems ready to burst; no client can bore you for hours without giving a single important fact in his case; and where you will hear of no impecunious creditor's paper going to protest,—is worth a large amount of preliminary toil.

After having, as Lazell asserted, taken an outfit sufficient for a whaling voyage, we devoted still a day to getting little odds and ends which Curtis's experience had taught him to provide—things which seemed superfluous, and in fact almost absurd, and yet worth their weight in gold when one is thirty miles from a settlement. Lazell finally, getting a little out of patience, sarcastically insisted upon our taking a crutch, in case any one should lose a leg. Six weeks later, when my unfortunate friend, after cooling off too suddenly from a twelve-mile walk on a hot day, found himself unable to use one leg, and hence was deprived of his turn at the distant best pool, we turned back the laugh by suggesting the crutch which we had



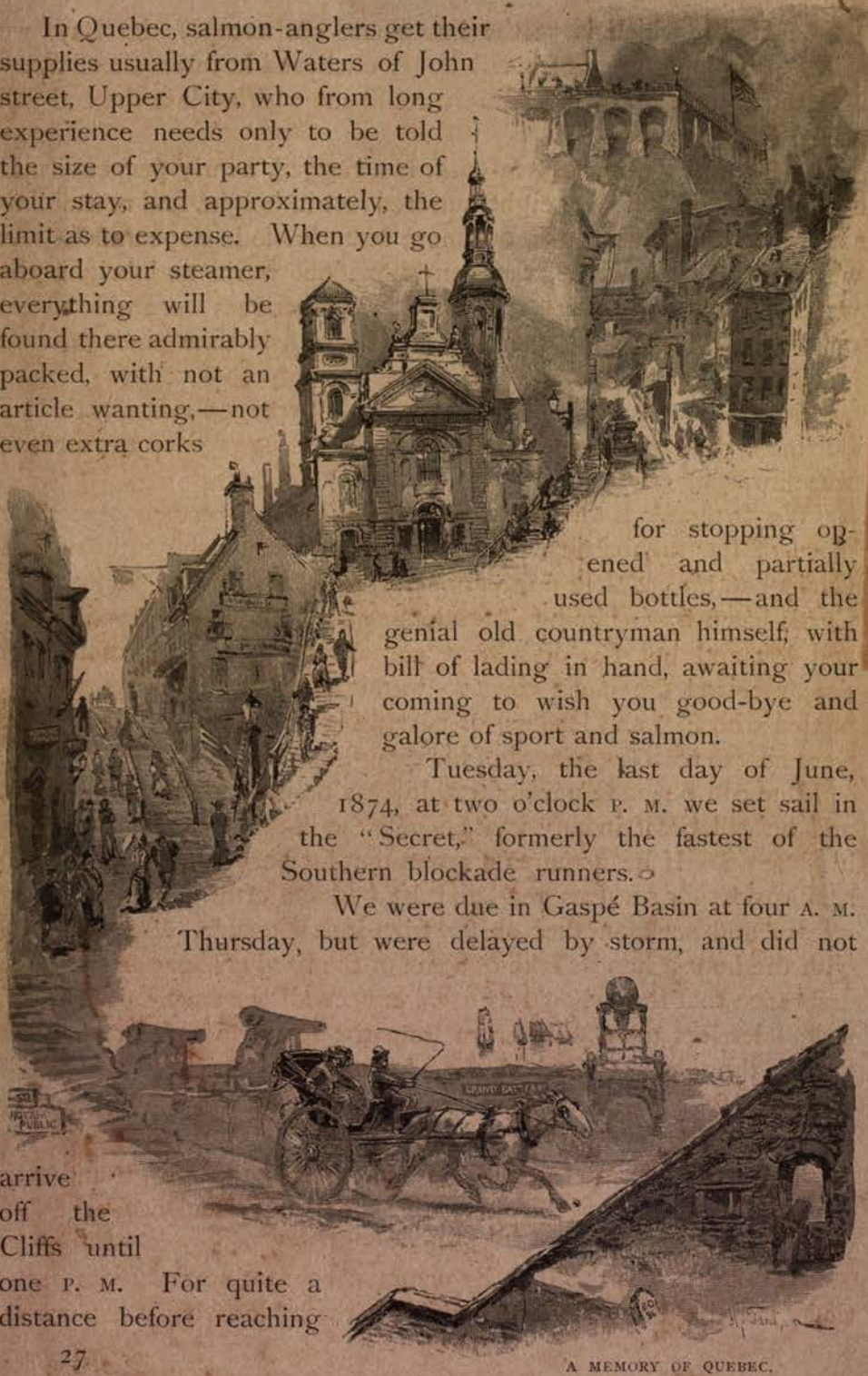
QUEBEC FROM THE RIVER.

failed to bring. The only desirable thing we did forget was a box of Bermuda onions. These could not be procured in Canada, and were ordered thither from Boston by telegraph. They only reached us ten days after our arrival upon the stream; and if a tippler longs for his drams as we did for the onions, after a diet of fish and salt meats, we pity him.

To one about to make a trip to Canada East, we would say: Start in all cases from New York, even though you live in Boston. Take express trains direct from New York to Montreal without change, and then the Grand Trunk Railway or night steamer to Quebec. We started twice from Boston, going once by Portland and the Grand Trunk, and once by the Passumpsic Railroad. One can on these routes endure waiting from six or seven P. M. until ten P. M., and then, after two hours' additional travel, waiting from midnight until three A. M. at Newport, Richmond, or Island Pond; and at Richmond being crammed in a small room packed with French-Canadian laborers who never heard of a bath—I say one *can*, but he doesn't wish a second experience of the same sort. The Frenchman's remark, that all roads are good which lead to victory, didn't console us when we arrived in Quebec on time.

A day in the quiet, quaint old city of Quebec is not without pleasure and profit. One goes away feeling that, after all, heavy taxes with progress and improvement are not such objectionable things. The quiet of Quebec is broken but once each day—upon the departure of the steamer for Montreal.

In Quebec, salmon-anglers get their supplies usually from Waters of John street, Upper City, who from long experience needs only to be told the size of your party, the time of your stay, and approximately, the limit as to expense. When you go aboard your steamer, everything will be found there admirably packed, with not an article wanting,—not even extra corks for stopping opened and partially used bottles,—and the genial old countryman himself, with bill of lading in hand, awaiting your coming to wish you good-bye and galore of sport and salmon.



Tuesday, the last day of June, 1874, at two o'clock P. M. we set sail in the "Secret," formerly the fastest of the Southern blockade runners.

We were due in Gaspé Basin at four A. M. Thursday, but were delayed by storm, and did not arrive off the Cliffs until one P. M. For quite a distance before reaching

A MEMORY OF QUEBEC.

Gaspé Head, which is at the immediate entrance of the Bay, we sailed past long lines of small boats anchored at intervals of a few hundred feet. Into these boats we could see with a glass the cod-fish pulled at rapid rates.

The last few miles of sea-coast is a rugged, nearly perpendicular cliff, in some places over eight hundred feet in height, and resembling somewhat the Dover Cliffs, but more remarkable in appearance. As we turned Gaspé Head, the sun shone out warm and bright, the water became more quiet, and our lady passengers were able to get on deck, and to enjoy themselves for the first time since leaving Quebec.

So well had our kind friend Reynolds arranged matters, that all our men, with horses for taking us with our luggage up the stream, were awaiting us at the wharf.

We delayed a little to receive the honest welcomes of a score or more of the inhabitants, who, having learned that friends of Mr. Curtis had arrived, lost no time in paying their respects. Our friend Curtis has a way of going around the world, dispensing favors right and left, and but few prominent persons in Gaspé had not at some time received the much coveted permit for a day's fishing, accompanied with flies and leaders, or something else equally desired. We were now to reap the reward of his thoughtfulness about little matters.

One can be made uncomfortable by a thousand little annoyances, and he will be, if in any way he gets the ill-will of the people near his stream. If he acquires a reputation for bargaining and paying small prices for services rendered, he had better at once give up his stream and seek another as far from it as possible. Accompanied with the honest hand-shake of some of the hardy fishermen was their assurance that they should as usual expect all our worn-out flies and frayed leaders upon our return from the river, and also any spare fish we thought not worth sending home. Their universal "so long" in place of good-bye amused us not a little, but why they use it or whence it is derived we could not conjecture.

Half a mile from the landing we stopped upon high ground near the residence of Mr. Holt (then our efficient Consul at Gaspé), to enjoy our surroundings.

At our feet was the Bay, by common consent scarcely less beautiful than the Bay of Naples, which it resembles when seen from a

PERCÉ ROCK, SOUTH OF GASPÉ BASIN.

certain point. In the hazy distance was the indistinct line of the Gaspé Cliffs, and our steamer rapidly making her way to the Gulf. The sun lighted up most beautifully the intense green of the forests, which were broken here and there by neat white cottages and their surrounding patches of still brighter green. Although the very last of June, the foliage was not yet burned by the summer's sun, and the grass was but just greening.

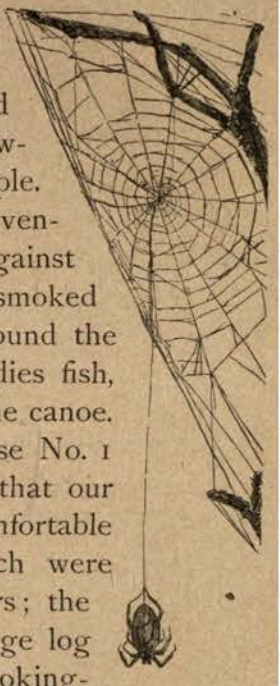
Six miles from the settlement the road became a mere path, and we took to our saddles, which the thoughtful George had stowed in our two-horse wagon. Two miles farther and we were at the first pool of the river called the High Bank Pool. We determined at once to try it and throw our virgin fly for salmon. Setting up our rods, we scrambled down the steep gravel bank with the enthusiasm of school-boys. Insects of various sorts were there long before us, and soon we were compelled to send Coffin up the bank for our veils. The veils used are of the thinnest silk *barége*, in form of a bolster-case open at both ends, which are gathered upon rubber cords. One cord goes around the hat-crown and the other around the neck under the collar. These veils perfectly protect the face from insects, but do not allow smoking, and interfere slightly with the vision; I therefore discarded them, and now use a brown linen hood with cape buttoning under the chin. The pests were so persistent that we were glad to put on linen mitts, which tie around the elbow and leave only the finger-tips exposed. Finally, the little brutes drove us to anointing our finger-tips with tar and sweet-oil, a bottle of which usually hangs by a cord from a button of the angler's coat. A philosophical friend once insisted that it only required the exercise of strong will to endure the pests, and that protection was

effeminate. The second day, he looked much the worse for wear, his handsome face disfigured with swellings, and his eyes almost closed from the poison of the bites.

THE STRATEGIC ANGLER.

We now worked away in comparative comfort until I saw Lazell, who was a few hundred feet distant, suddenly dash off his hat and commence slapping his head with both hands as if determined to beat out his brains. I concluded that he must have had a rise, and that, contrary to his custom, he had become excited. Going to him, I found that the black flies, baffled at all other points, had found the ventilating eyelet-hole upon each side of his hat-crown, and had poured in through them in hordes upon the top of his unprotected head. Getting no rise, I climbed up the bank to await my more persevering friend. (It may be noted, in passing, that we learned a few days later that we had not cast within several hundred feet of that part of this pool where salmon usually lie.) Soon my friend's head appeared over the bank with apparently a good stout stick thrust completely through it, hat and all, as if some stray Micmac had shot him with a roughly made arrow. The solution of this was that Lazell had plugged up the holes in his hat with a broken rod, and thus cut off the flies from their favorite foraging grounds.

It is a fact not generally known that the farther north you go, the larger and more venomous are the mosquitoes. According to the late lamented Captain Hall, of Arctic fame, one knows little of the annoyance of these insects who has not been in Greenland during the summer months. After a summer upon the Gaspé streams, a person of even large inquisitiveness doesn't long for any more information upon that branch of natural history. They are so trouble-



some there that, to fish comfortably, it is necessary to protect the face and neck, and cover the finger-tips with a mixture of tar, sweet-oil, and pennyroyal. Gaspé insects seem fond of newcomers, and our blood afforded them a favorite tipple. Seriously, however, we were not much inconvenienced, as we took every known precaution against them, and not only had our rooms thoroughly smoked with smudges, but kept large smoldering fires around the houses the greater part of the time. When ladies fish, a smudge is kept burning upon a flat stone in the canoe.

We reached our comfortable quarters at House No. 1 at nine P. M. while it was still light. We found that our house was clapboarded, and contained two comfortable rooms; one with berths like a steamer's, which were furnished with hair mattresses and mosquito-bars; the other served as sitting and dining room. A large log house adjoined and was furnished with a good cooking-stove, while a tent was already pitched to serve as quarters for our men—five in number. Stoves and furniture are permanent fixtures of the houses at the different stations, as are the heavier cooking-utensils, so that in moving up the stream one has merely to carry crockery, provisions, blankets, and mosquito-bars,—which latter are of strong thin jute canvas. Above the first house, the men make your beds of piles of little twigs of the fragrant fir-balsam, whose beauties have been recorded by every writer upon angling. Near each house is a snow-house, dug into the hill-side and thickly covered with fir-boughs and planks. The snow is packed in them in winter by the men who go up for that purpose and to hunt the caribou that frequent the hills adjoining the river. The snow lasts through the season, and is more convenient than ice. If one drinks champagne, he has but to open a basket upon his arrival and imbed the bottles in the snow, and he has at any moment a *frappé* equal to Delmonico's best. The fish as soon as killed are packed in the snow, as are the butter, milk, and eggs when brought up every two or three days by the courier, who remains at the Basin ready to start for you at any moment that letters or telegrams arrive. Our courier delighted in surprises for us such as baskets of native strawberries and cream for our dessert. Ten

cents at Gaspé buys quite a large basket of this exquisitely flavored wild berry.

I have been thus minute in describing our surroundings, because I believe more comfortable and complete arrangements are found on no other stream. It is all very well to camp out under an open "lean-to" or tent, and exceedingly healthful and enjoyable, but we rather enjoyed this comfortable way of living. Standing for six hours or more daily, while throwing a fly or killing a fish, is hard work for one of sedentary habits, and gives enough exercise and oxygen to make one wish for good living and quarters; and with this open-air life one may indulge his appetite with impunity if he can get the food, for his digestion and assimilation are at their best.

The difference between the temperature at midday and midnight in the mountainous regions along the Gaspé salmon-streams is notable. One day last season, the air at nine A. M. was 74°, at two P. M. 84°, and at half-past seven P. M. 51°. We were anxious to get approximately the temperature of the water of these northern streams to compare with the water of streams farther south, which had been stocked with young salmon by Professor Baird, United States Fish Commissioner, and so made the best observations possible with a couple of ordinary thermometers. At the bottom of one pool in the York, near the mouth of the Mississippi Creek, which is a roaring little branch of the York coming down from the snow of the neighboring mountains, the water at midday was but 40½° Fahrenheit, while the air was 78°. In other pools on this river we found the temperature at noon to be 44° at the bottom and 44½° at the surface, with the air at 60°. This was well up among the mountains, thirty-five miles above the mouth of the river. Lower down the stream, 48° bottom, 48½° surface; and sometimes after a very warm day, 47½° to 48½° at eight o'clock P. M. Ten or fifteen miles distant, upon the Dartmouth, which flows through a less mountainous country and has longer and more quiet pools and less shaded banks, we found the pools varying from 55° to 59° when the air was 60° to 70°.

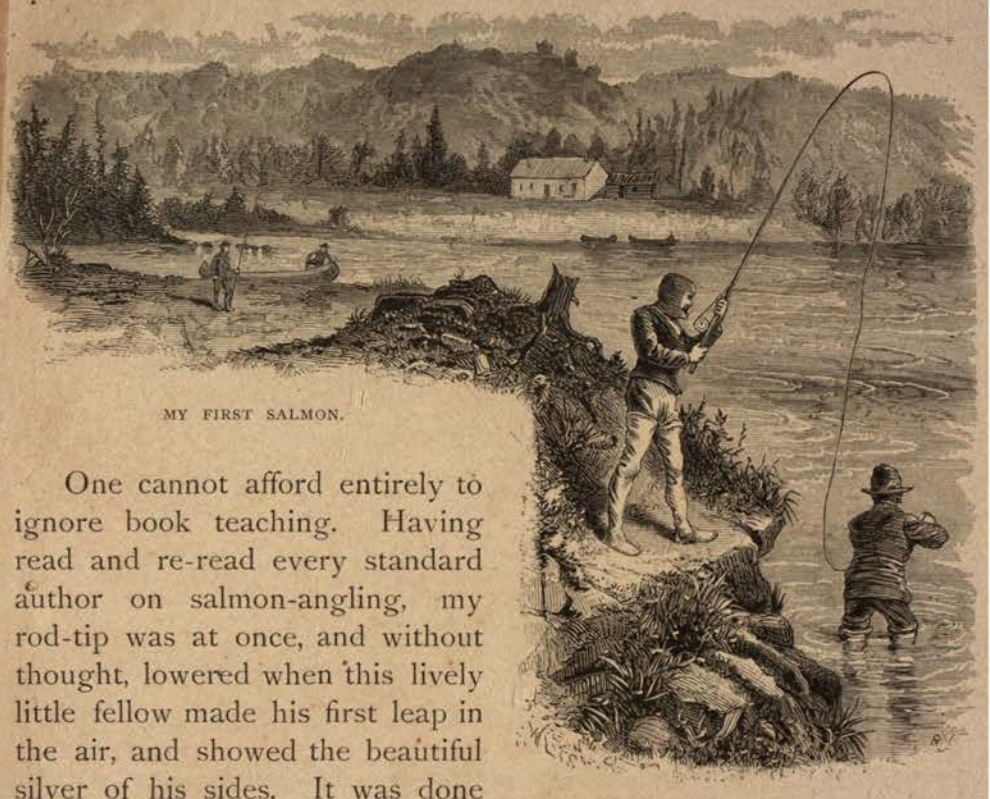
Upon the first morning of our arrival, we *did not* get up at three A. M., when the day was just dawning, and order up our men to get breakfast. We had been in northern latitudes before, and took the precaution to hang our rubber overcoats over the windows to darken

PERCÉ ROCK.

MISFORTUNE.

them, thus keeping out the early morning light and securing a long night's sleep. Our first day opened with a drizzling rain which forbade fishing. After coming a thousand miles, and with but six days' "permit" upon our stream, a rainy day seemed like a misfortune.

About ten o'clock, the sun came out, and I went to the pool directly in front of the house, to practice casting with both hands as well as get used to standing in a cranky canoe. Soon a fish rose and hooked himself, only making it known by spinning off a few feet of line as he dropped back to position at bottom of pool. A fish will thus hook himself nine times in ten if the fly comes slowly over him with a taut or at least straight line behind it. More fish are lost by too quick striking them than by other bad management. The steel-like tip of the rod upon the slighest pull at the fly springs forcibly back and fixes the hook at once. I had resolutely determined never to strike, and have never done so. I may have lost a fish by it, but am sure more would have been lost by striking. Of course, a strong, quick pull is given after the fish is hooked and has started the reel, in order to imbed the hook more firmly. Soon my reel was furiously whirling. I had read about the "music of the reel" and all that sort of thing *ad nauseam*, as I had often expressed it; but somehow, after hearing a salmon in his first fierce run upon a reel with a stiff click, the wonder was that people had not written more about it.



MY FIRST SALMON.

One cannot afford entirely to ignore book teaching. Having read and re-read every standard author on salmon-angling, my rod-tip was at once, and without thought, lowered when this lively little fellow made his first leap in the air, and showed the beautiful silver of his sides. It was done just as the fingers strike the proper key upon a musical instrument, when the player's mind is too far away perhaps to name the tune he has unconsciously run into. Of course, if you do not lower your rod-tip, the fish, falling upon a taut line, will break himself loose. This fish showed no disposition to leave the pool for the rapids below, but went first to one side, and then to the other, sweeping around by the farther shore, and jumping clean from the water each time he turned. It was impossible to keep below him, so rapidly did he change place. In spite of all the strain which could be safely put upon him, he would now and then get a hundred feet below the rod and rest there in comparative ease, with the force of the current balancing my strain upon him in an opposite direction. When you can keep abreast of your fish, or a little below him, the current, weight of line, and your strain of two or three pounds all in the same direction will soon tire him out.

Most anglers greatly miscalculate the force exerted by the rod, and will speak of using many pounds' strain. An actual test with a

spring balance upon various rods showed that rarely is a strain of three pounds put upon the fish, and, in fact, few rods can raise a four-pound weight at the end of a line.

As my fish became tired and slowly passed the gaffer, he tried to gaff and missed. This goaded the fish to more desperate running and plunging in the direction of a projecting tree-trunk lying upon the water. If he could have reached it, he would have run under and then jumped back over it, leaving the line fast while he broke himself free. Soon his runs were shorter and his jumps less frequent, and finally, from very weakness, he would turn upon his side. I swung him gently toward the gaffer, who in his eagerness had waded nearly waist-deep into the pool. In an instant the fish was struggling at the end of the cruel gaff, making hard work for the man's brawny arms, and in a moment more he was laid upon the shore, where old William Patterson gave him the *coup de grace* with a stout short stick carried for that purpose in every canoe. Just at the moment of gaffing many fish are lost; for if more strain is exerted than usual, the hook breaks out of the well-worn hole in the jaw, and if the strain is relaxed a moment before the gaff is in, the slack line lets the hook drop out of the enlarged opening.

My trip and trouble had not been in vain, as my first salmon had been hooked and played to gaff without the slightest assistance. Before putting him in the snow, I lighted my pipe and sat quietly down to admire and talk to him. It seemed wonderful that the little thread of silk-worm gut could have conquered so brave a fish.

Finding but few fish in the lower pools, we broke camp on Monday, and set out for House No. 2, at what is called the Big Salmon Hole. The men assured us that it would be impossible to pole the canoes with ourselves and provisions over the shoal rapids, and that in several places they would have to unload and make a "carry." In order, then, to favor our men, Mr. Lazell and I set out to walk the distance, with the cook to show the way and carry our tackle. We could risk the wetting of our extra clothing and provisions, but did not care to have our rods floated down the stream, in case of an overturn. Of itself, a twelve-mile walk is not objectionable, but when one must climb over a dozen fallen trees at every hundred yards, it becomes monotonous. Six miles from camp we came to the North Fork, a roaring brook of perhaps eighteen inches

THE PATIENT ANGLER.

in depth. Lazell, with his wading-boots, stalked triumphantly across, while the cook and I went down a quarter of a mile to cross upon a tree which, some years ago, had fallen and formed a natural bridge. There was no path along this wind-swept gorge, and trees were piled upon trees, making many windfalls to be gotten over. At the end of a long half hour we came back to where Lazell was awaiting us. Could we have met the man who said there was a "pleasure in the pathless woods," he would have fared badly. The truth was that the dead-wood of the bridge had broken under our weight, and we were wetter than if we had waded the branch. Often upon this trip we touched, with our rod-cases or gaff, the partridges which unconcernedly flew up and lighted on the lower branches of the trees. We reached the pool, and killed a fish before the canoes arrived. The next morning, Annette, Lazell's gaffer, came tumbling down from a tree where he had been sent to point out where the salmon were lying, and ran to the house yelling as if crazy, "Mr. Lazell has got his first fish, and he's a whopper!" Sure enough he had on a fish, and it commenced sulking at once. He had lighted his pipe and taken his seat just where one of Mr. Reynolds's friends, in 1873, took his breakfast while holding his sulking fish with one hand. Having gone to the pool with my light bamboo, to which he was unaccustomed, he was unprepared for heavy fighting, as he felt insecure and had a dread of breaking it. Now and then, by rapping on the metal butt of the rod with a stone, the vibrations of the line would start the fish into making a short run and lazy jump. The men all put the fish at thirty-five pounds, and they are rarely more than a pound or two out of the way. Soon the fish began quietly working for the deepest part of the pool, and in

spite of all the strain my friend was willing to put on him, finally got there under the edge of a sharp ledge. The salmon commenced sawing upon the line whenever a strain was brought to bear, and this necessitated giving line at once. After working for one hour and forty minutes, the leader parted.

Without a word, Lazell took his own greenheart rod, and in a few minutes was busily casting at the very upper end of the pool, above where he had hooked the first fish. As good fortune would have it, he soon hooked a large one which came down the pool and tried the same game, but he managed to stop him and slowly swing him away from the center of the pool each time. Quite soon the fish ran and jumped enough to weaken himself, and was brought up to the gaffer. This was my friend's first salmon, and it weighed thirty-three pounds.

The skill of our men in gaffing struck us as remarkable, for during the season they missed for us but a single fish. Not the same romance attaches to them as to Indians, and they do not present that statuesque appearance while gaffing, but they are a thousand times more reliable, and always know better where

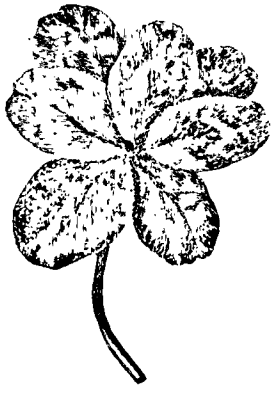
A HALF-BREED NETTING SALMON.

the fish lie, and how quickest to aid you to circumvent and kill them. The Gaspé men can give even the best of anglers a valuable hint occasionally, which it is quite safe to follow, as it often saves a fish. They come from that good old stock, Scotch-English, and are as true as steel. Money and jewelry were safer in our camps than at home in the way of our servants. They never touch a drop of liquor, and work faithfully from morning till night. Even after long and tedious hours of poling up rapid streams, under a hot sun, they are ready to anticipate your slightest wish. All the men ask for, beside fish, is pork, hard bread, sugar, and black tea. Without the latter they are good for nothing. They make the tea in the tea-kettle itself, and drink several large tincupfuls at a sitting. Following this by a five minutes' pull at a pipeful of navy plug tobacco, they are ready for work.

In favorable seasons, the Big Salmon Hole of the York is good for two or three fish daily; and as Lazell was unable to walk by reason of cooling too rapidly after our twelve-mile walk, it seemed best to leave to him the exclusive use of this and the other pools near House No. 2. On Wednesday, therefore, I set out for the Narrows, near which are the last and best pools of the river, leaving two men to come with the canoe and luggage, and taking one with me. We arrived before noon, and, after lunch, carefully inspected the pools. By crawling quietly to the edge of low cliffs, or climbing trees, we could count the fish by scores, lying quietly behind small stones or just at the edge of the current, with heads up-stream. At first, one unaccustomed to it only sees large numbers of dark, smooth stones, as he expresses it; but soon a little wavy motion of the lower end of the object is seen, and you find that they are all salmon, only the dark backs being visible as you look down upon them. They rest in these pools for several days, to gain strength for leaping the falls just above. Often one hundred and fifty have been counted in the lower or long pool at the Narrows, and frequently not more than a single one will take the fly.

The matter of taking a fly seems to be one of sheer sport. It is a well established fact that salmon eat nothing during the several months they remain in the rivers. Before entering the Gaspé streams they gorge themselves with capelin, a small fish resembling our smelt. Quite often fish which we killed at the lowest pools had undigested

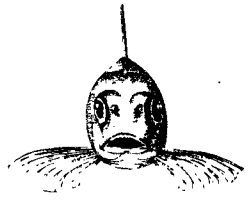
parts of capelin in their stomachs. As their digestion is known to be very rapid, this indicates a high rate of speed against a swift current up fierce rapids and over falls. A bit of dried leaf seems to amuse them as much as an artificial fly. Dropping a leaf quietly off a tree into a pool, we could see a salmon rise and take it, and after getting to the bottom open his mouth and let it float up to the surface again, when other fish would take it, one after the other, apparently enjoying the sport like kittens at play. So distinctly could we see the salmon that we easily traced the scars of the nets, which are found on large numbers. Many we take have an eye entirely blinded from the wound made by the twine. At one time, just under the upper falls, I was for some fifteen minutes so near a salmon that I could have touched him with the end of my rod. The water was shallow and clear, and gave a good opportunity of closely watching the king of fishes as he majestically sailed around, probably wondering whether he would succeed in his leap over the falls. Dozens of his fellows were coming up at intervals to look at the falls, but not one could be tempted to take the slightest notice of any fly in our books, although we were out of their sight and threw our flies within a few inches of their noses.



We had with us rods, reels, gaffs, and, unfortunately, a new and untested package of leaders. The run of the first fish hooked parted a leader. A second leader shared the same fate; and a third was taken by a salmon who determined to leave the pool and go down the rapids below. Testing our leaders with the spring balance, we broke them at a pound or pound and a half strain, although they had previously received a thorough soaking. We were in a bad predicament; salmon everywhere; pools full of them, and seeming eager to rise, and no suitable leaders with which to take them. We made the best of it, and with what patience we could, awaited the canoe with our large fly-books containing new gut. From this we afterward tied leaders which stood a strain of five pounds, and were soon engaged in trying to overcome a strong, lively fish.

Presently our head man sung out, "You must lose your fish or get a drenching." A small dark cloud came over the near mountain, trav-

eled rapidly down the gorge, and before one of the men could bring a rubber coat from the house, a few hundred yards distant, the rain was pouring upon us. The rapidity with which heavy showers follow down the gorges and course of the streams at Gaspé is somewhat startling to a new-comer. Of course, the fish must at all hazards be killed; and, of course, this particular fish was not in half the hurry to come in out of the water that we were, but tried our patience in many ways, sometimes taking us in the canoe where we couldn't wade, and sometimes through quite deep water where we did not wish to take the canoe and disturb the pool. It was thirty-five minutes before faithful old William had him quiet at the bottom of the canoe. He, as well as all our men, preferred to get us into a canoe before gaffing, when practicable, for they then felt much more sure of the fish. The Gaspé-built canoes are very long, and if the angler passes one of the men and steps to the extreme end, he can with perfect ease swing the fish to the gaffer at the other end, always taking great care not to reel in his line beyond its junction with the leader. If he does this and the gaffer misses, or the tired fish gets up life enough for a short spurt, then the knot sticks in the tip ring, and good-bye to fish and tip. It is with some reluctance that we differ with so good an authority as Norris, in his "American Anglers' Book," but we prefer canoe gaffing. We were all thoroughly soaked with rain, and I was additionally uncomfortable from having gone over the tops of my rubber wading stockings in water, which at two P. M. was only 42° Fahrenheit. As there were but three hours more of this the last day of our permit, we could not afford to lose a moment. As soon as the sun came out, I hooked a second fish, and worked away busily until in the three pools I had killed five, when I stopped, wearied as well as satisfied with salmon-fishing, resisting our man's most urgent entreaties to "kill another, and make it a half dozen." I have never made a large score or killed a *very* large fish, but this work of three hours and a half was quite satisfactory, and is here given:



1	Fish of	22 lbs.,	Fairy	Fly.
1	" "	22 "	"	"
1	" "	24 "	Jock Scott	Fly.
1	" "	21½"	Silver Doctor	Fly.
1	" "	23 "	Silver Gray	"
5		112½.	Average, 22½ lbs.	

The healthful excitement as well as open-air exercise enabled us without ill effects to endure this three and a half hours' wetting.

At half-past four A. M. next day, the canoe went down with the fish, and I walked to Middle House, where I found Lazell in good spirits over one thirty-three pound fish and other smaller ones.

Hastily packing, we set out in our canoes for House No. 1, where we took in additional fish and luggage. Running down the rapids between sharp rocks, both out of the water and under its surface, where all your safety depends upon the accuracy of your men's knowledge, their nerve, and the strength of rather slender spruce setting-poles, is quite exciting to a novice. At the word "check her" from old William at the stern, young James throws his entire weight suddenly upon his pole in the bow. Several times the pole broke, and necessitated quick work in dropping the pieces and grasping a second one, which is always kept within reach in running rapids. Upon breaking a second one, in all likelihood we would have got an extremely unlucky dipping.

We reached Gaspé the same day, having made thirty-five miles since half-past four A. M., and were in time to have our fish packed in snow and forwarded by the afternoon steamer for Quebec. For transportation, the fish are first "drawn" through the gills, then filled with snow and packed two in a box. The snow is then rammed solid around them until it resembles in consistency a cake of ice, and the box is placed inside of a much larger one. The space between the two boxes is now filled with sawdust. At Quebec, the boxes are examined and refilled, if necessary, before forwarding by rail. Our fish left Gaspé Thursday, were in Boston in good condition the Tuesday following, and were served at the Somerset Club just a week after they were killed. With ice in place of snow, the packing is usually a failure.

Finding a letter at Gaspé inviting us to fish the Dartmouth, we went over to that river on July 10th, taking horses to a place called by

the habitants Lancy Cozzens, which we presumed to be a corruption of *L'anse aux cousins*. From this point we proceeded by an invention of our own. One of the three canoes had a small sail, and holding another canoe by our hands upon each side of it, we voyaged very independently until we tried to tack under a very stiff breeze—a performance which didn't take place exactly to suit us. Reaching the narrower part of the stream, we took our setting-poles in orthodox fashion, and soon reached camp, where we found a commodious wall-tent ready pitched, and all needed cooking-utensils, as well as a salmon for supper, left in the house by some departing friends.

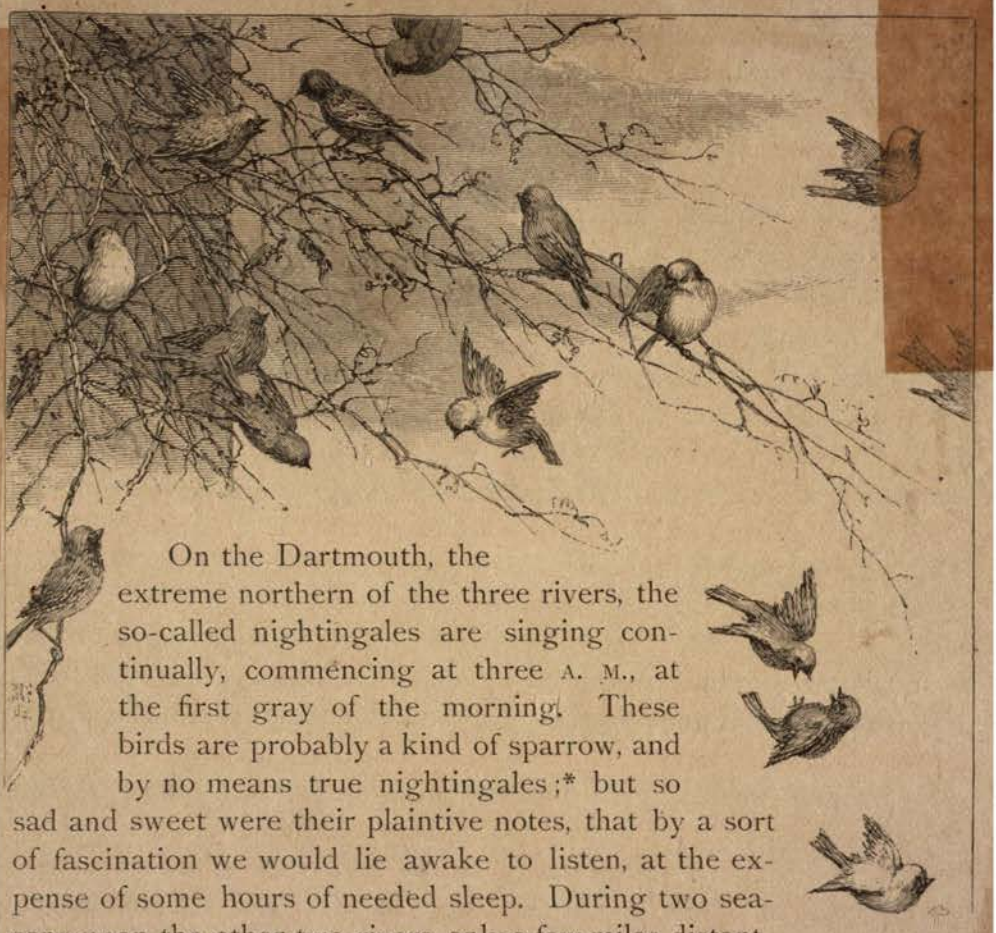
AN IRATE ANGLER.

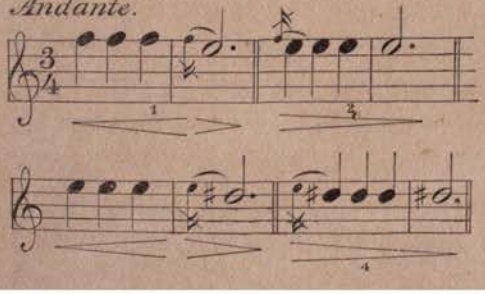
The sea-trout had just commenced running up the river, and gave us most serious annoyance. The sea-trout is anadromous, and follows up the salmon some weeks later. An old trout-angler believes you not quite sane, and much less serious and truthful, when you positively assure him that oftentimes before you can reach a salmon you must play to gaff a half-dozen or more sea-trout, varying in weight from one to five pounds. That a five-pound trout can be an annoyance, and a serious one at that, isn't readily comprehended. You can't hurry a large trout, but must play and tire him out. Occasionally your man from a tree-top will tell you just where a fine salmon is lying, and, perhaps, that he started for the fly and missed it at your last cast. The next cast, a sea-trout, which is quicker than a salmon, snatches your fly the moment it strikes the water, and in the next few minutes flounders all over the pool, putting an effectual stop to salmon-fishing. Now is the time for self-control—for quietly

lighting a cigar and strolling back to camp. Sometimes an irascible angler seizes the trout the moment he is off the hook and hurls him vindictively against the cliff.

This same abused sea-trout, however, when broiled before the fire in an open wire broiler, with a bit of salt pork clamped upon him, or rolled in buttered and wetted papers, and roasted under the embers, is preferable to salmon, and is more often eaten by the Gaspé anglers. The sea-trout and the common brook-trout, *Salmo fontinalis*, are taken side by side in the same pools; and so great is the apparent dissimilarity, that it seems impossible that they are one and the same species, the sea-trout merely being changed by his trip to sea, as some naturalists assert. The spots on the brook-trout are much more clearly defined, and have the light color upon their edges, while the markings of the sea-trout seem not to be distinct spots so much as irregular markings akin to those of the mackerel. This is as it appears to us who are not naturalists.

It is notable that although the three Gaspé rivers flow into the same bay, and for long distances within a few miles of each other, yet the fish are so different as to be readily distinguished one from another by the natives. The fish run up earliest in the York, and those taken even in the lowest pools are of larger size than those of the other streams. Of course, those that are strong enough to get to the upper pools early in the season before the river has run down are extremely large. The last runs of fish in the York are perhaps a trifle smaller than the general average of the St. John, where the early and late runs are of more nearly the same average size. So the fish of the Tay, in Scotland, are a month earlier than those of the Tweed, and presumably in this case because the snow gets out of the former much the sooner. The fish of the St. John are slightly shorter and fuller than those of the York, resembling more nearly the *Salmo quinnat* of California. A few seasons since, the St. John was so jammed with the logs of a broken-up lumber raft that the fish were blocked out of it, and that year its peculiar fish were taken in the York. The next year, the St. John was clear, and its fish went back to it. A few seasons later grilse and young salmon were taken in the York which slightly resembled the St. John fish. The parent fish returned to their own stream. Their offspring, which were hatched in the York, remained in that river.

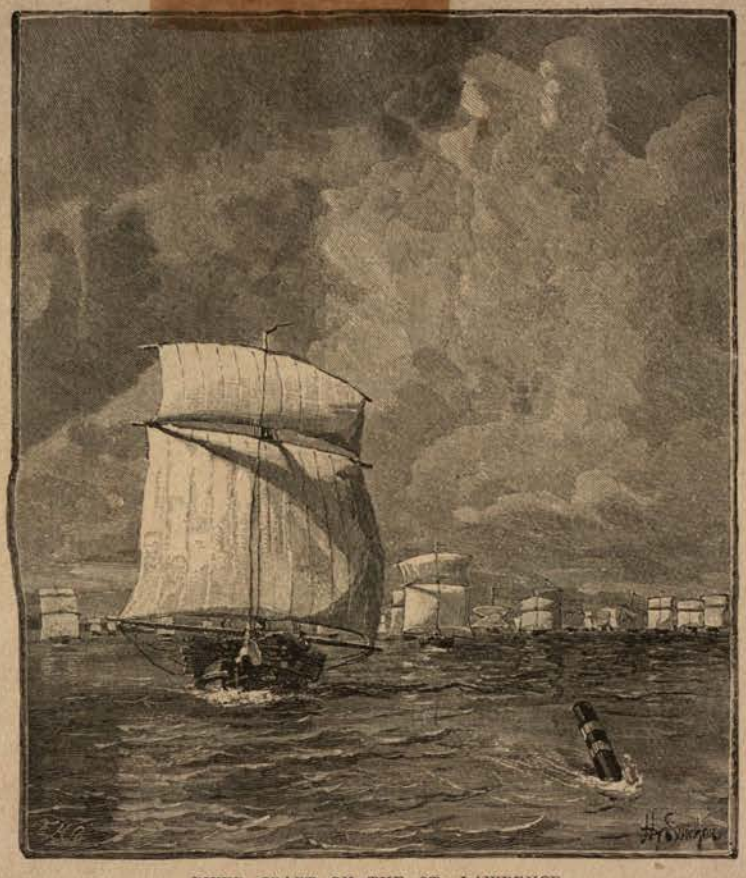


On the Dartmouth, the extreme northern of the three rivers, the so-called nightingales are singing continually, commencing at three A. M., at the first gray of the morning. These birds are probably a kind of sparrow, and by no means true nightingales;* but so sad and sweet were their plaintive notes, that by a sort of fascination we would lie awake to listen, at the expense of some hours of needed sleep. During two seasons upon the other two rivers, only a few miles distant, not one was heard. After some practice in imitating them, we thought the following musical notation gave a very good idea of the song, which varied slightly with different birds, and at different times with the same bird. Between each double bar is a single song. Numbers 1 and 2 are different songs of one bird, and Numbers 3 and 4 are songs of another bird.

* [The white-throated sparrow (*Fringilla albicollis*, Wilson). During spring-like days in December, while hunting Bob White in the South, I have often heard the soft, melancholy whistle of this little songster, recalling to me, with "a feeling of sadness and longing," the blessed solitudes and the summer scents of the Northern woods.] —EDITOR.

The terms of lease of a Canada salmon-stream require the lessee to maintain a guardian upon the river at his own expense. A comfortable log-house of a single room is usually built just below the first pools, and the guardian occupies it during the few months of the angling and spawning season. This expense is quite light, sometimes only a hundred dollars in gold. In addition, the Government appoints and pays overseers, who are assigned to special districts, and are expected rigidly to enforce the law regulating the net fishing in the tidal part of the rivers, and particularly to see that the nets are taken up over Sunday. The Gaspé rivers flow through so wild and inaccessible a country that it is impossible for poachers to reach the pools and carry away fish in large quantities except in canoes, which must pass the guardian's house.

If the Government would offer a bounty for every sheldrake killed, it would greatly aid in keeping the streams better stocked. In the stomach of a young sheldrake will be found sometimes six or more *parr*, as the young of salmon are called. When we consider the numbers of broods raised each year on a stream, and that both young and old are gormandizing parr all day long, we see that thousands upon thousands of fish are yearly lost in this way alone. These little parr, by the way, often bite at the fly, which is so large for them that they can only grasp some of its feathers, and hang on so well that you throw them several yards as you withdraw to make a fresh cast. The finger-marks or bars identify them at a glance.

One evening, while on the Dartmouth, we were surprised by a visit from the guardian and the overseer, who came to dine and spend the night with us. They bragged a little of a big fish the overseer had captured in an unaccountably short time. Upon examining the tackle, we found that the line practically ended at the reel, where it joined a worthless cord, and that even this apology for a line had not been wetted. The rod was a shaky affair, that couldn't possibly kill a lively five-pound trout. The hook was covered thickly with rust. In their canoe we found a fish of over thirty pounds. One eye was covered with an opaque substance which had grown over it on the line of an old net scar. The other eye had across it a recent cut, which had totally destroyed its sight. The fish was then totally blind, and in all likelihood had broken out of a net a few nights before. These cunning jokers had made a sharp and well-defined



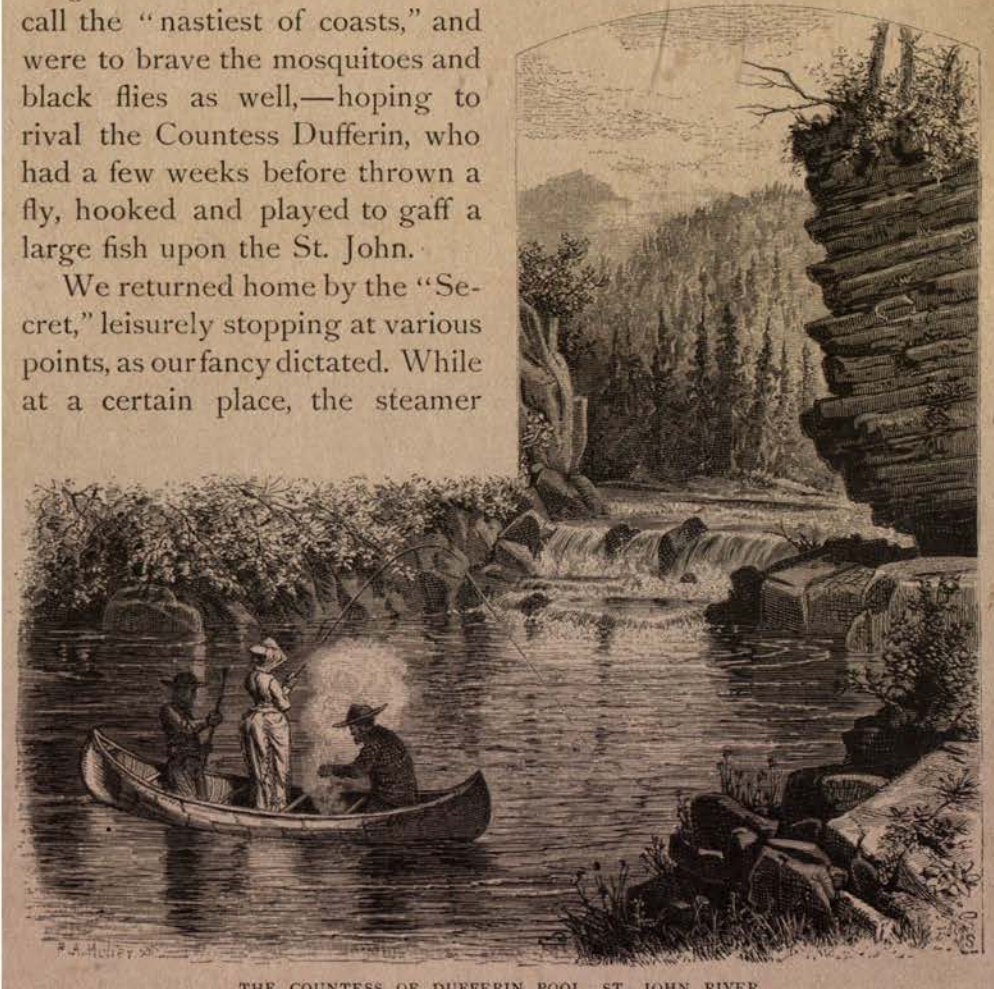
RIVER CRAFT ON THE ST. LAWRENCE.

cut in the jaw where fish are usually hooked, and they had gaffed him as he lay unable to see the approach of the canoe. We were glad that they had thus saved the fish from a lingering death, sooner or later, by starvation; but raising a blind fish to a fly, and killing him with a rickety bait rod and worthless line, was too much for our credulity. We never informed them that we had seen through their little fish-story, and presume that they had many a laugh at having made "States" men believe that blind salmon could be taken with a fly.

Wednesday, July 15th, found the usually quiet and sleepy little settlement of Gaspé in great commotion. Some people were out on the house-tops with spy-glasses, and others rushing down to the wharf, where a goodly number had already collected. Going to the upper rooms of the Gaspé Hotel, to which we had just come from the Dartmouth, we saw a beautiful yacht coming rapidly

up the Basin under full sail. Soon she was abreast the wharf, giving all a view of her exquisite proportions, and, passing slowly up where the York merges itself in the waters of the Bay, gracefully swung into position and dropped anchor. She was the "Palmer," well known in both this country and Europe for her victory over the "Cambria," and famous as well for being the winner of numerous other races. Soon we received a call from her owner, Mr. Rutherfurd Stuyvesant, who was to have the York the rest of the season. A little later we met the rest of his party, and were invited to pass the evening on board the yacht. The ladies had braved a ten days' voyage from New York, and part of it in very rough weather, off what sailors call the "nastiest of coasts," and were to brave the mosquitoes and black flies as well,—hoping to rival the Countess Dufferin, who had a few weeks before thrown a fly, hooked and played to gaff a large fish upon the St. John.

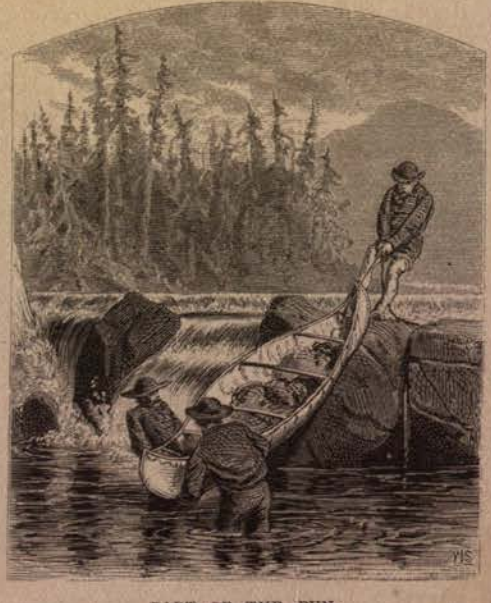
We returned home by the "Secret," leisurely stopping at various points, as our fancy dictated. While at a certain place, the steamer



THE COUNTESS OF DUFFERIN POOL, ST. JOHN RIVER.

touched with the mail, and was to remain two hours. Could the mail be opened at once, and we receive our letters, we might wish to hurry on by that very steamer. We therefore brought all our forces to bear upon the obdurate postmaster, to induce him to open the small pouch with mail for his office, and give us our letters at once while the steamer was still at the landing. His constant reply was: "It cawnt be done. Government business cawnt be hurried. The mail is too lawge, too lawge."

When the steamer arrived, he was the first to board her. He chatted consequentially with the officers for more than an hour. They were all on our side, and tried apparently to shake him off. Finally, with the little pouch (which he wouldn't intrust to his clerk —also on our side) under his arm, he slowly and with the firm, determined tread of a militia captain on training-day, moved off toward the post-office. Fifteen minutes would have sufficed to distribute the mail; but not until the steamer's last whistle blew did he put the letters into the boxes. He reckoned without his host, however; for a friend was quietly watching, and in an instant took our letters and started for the steamer at full run, yelling at the top of his voice. Good old Captain Davison just then remembered that he had forgotten something, and took time enough with the steamer's agent to enable us to glance hastily over our letters, and ascertain that we could go by that steamer.



PART OF THE FUN.

In 1874, Mr. Curtis exchanged his old river, the St. John, for the Dartmouth, in order that the former might be set aside for the Governor General. Earl Dufferin having been called to England in the summer of 1875, it fell to Mr. Curtis's lot to have the use of both streams, and I accompanied him for a few weeks' recreation.

To reach our stream from Gaspé, we were obliged to take

ourselves and all our luggage across the swollen York by repeated trips in a small dug-out, at a place some six miles from its mouth. After crossing, our provisions and luggage were taken in large boxes mounted upon stout timber sled-runners, this being the only conveyance that would stand a nine-mile trip over a slightly widened forest trail. We took saddle-horses, but yet found the trip most tedious by reason of the "windfalls" which had to be cut away by our canoe-men, who carried axes for the purpose, and by the swamp mud through which we frequently had to wade our horses.

The fishing of 1875 was comparatively a failure, less than twenty being killed by three of us during a week on the St. John. A friend of mine, Douglass, one day hooked an ugly fish, which played him all known pranks, and seemed, in addition, to extemporize a few for the occasion. The fish leaped out of water enough to make it exciting, but not enough to tire himself out. He tried pulling constantly backward and forward in quick, short jerks, which is the worst thing a fish ever does. This makes the coolest angler nervous and anxious, for unless line is upon the instant given, the hook is pulled out, or the gut broken. The fish came down in view of the house, when, comparing the pluck and strategy of the fish with the skill of our friend, we counted the fish a trifle ahead. Of course, when near either bank, the men took care to keep on the shore side of the fish, so that when he suddenly rushed for deep water he would not pass under the canoe and break loose. In spite, however, of all precautions, the fish made a dash to run under, and one of the men gave a quick, powerful push on his setting-pole, which unfortunately rested upon a flat, slippery rock. The next instant our view was cut off by an immense pair of caribou hide boots, which seemed suspended in mid-air.

EQUAL TO THE EMERGENCY.

The fish was just at the canoe, and the greenheart was taking the last possible ounce of strain. The line could not run out fast enough to relieve the rod, and we awaited its snapping. Equal to the emergency, Douglass, remembering an old trick of Curtis's, threw the rod behind him, and with reel end in the water and the tip ring resting on the edge of the canoe, the line ran safely and swiftly out. Douglass then tired and killed his fish, which weighed fifteen pounds —about the average of the St. John fish.

The non-angling reader by this time surmises that the only way to bring a salmon to the gaff is to tire him, by keeping a constant steady strain upon him, with the shortest practicable line. The greatest dexterity and skill of the angler and his men are required to keep the canoe always in such a relation to the fish as to make this possible. Half your score depends upon the quickness of the men, who must, if you are on shore, be so near you with the canoe that if the fish starts down a rapid, they can take you in upon the instant, and follow him. How patiently would our faithful fellows sit on the cross-bar of the canoe, and only now and then, when the flies and mosquitoes were unusually troublesome, break silence with "I don't care if I do take a little o' yer *fly-ile*."

"A LITTLE O' YER FLY-ILE."

To give the general reader an idea of the way in which anglers make up their scores for distribution among their friends, we give an old one, which still stands among the best made in America:

F. Curtis's Score of Salmon-Fishing, York River, Lower Canada, for one evening and the following day, 1871.

TWO HOURS, THURSDAY EVENING, JULY 6.

1 Fish,	18	pounds	weight	. . . . .	fly, Jock Scott.
1 "	22	"	"	. . . . .	" Robin.
1 "	25	"	"	. . . . .	" Robin.
1 "	26	"	"	. . . . .	" Silver Doctor.

FRIDAY, JULY 7.

1 Fish,	34	pounds	weight	fly,	Curtis.
1 "	32	"	"	"	Curtis.
1 "	26	"	"	"	Robin.
1 "	31	"	"	"	Robin.
1 "	17	"	"	"	Robin.
1 "	22	"	"	"	Silver Doctor.
1 "	24	"	"	"	Silver Doctor.
1 "	23	"	"	"	Robin.
1 "	26	"	"	"	Robin.

Total weight for both days, 326 pounds. Thursday's average, 22 3-4 pounds. Friday's average, 26 1-9 pounds each, and gross weight 235 pounds. Whole average, 25 1-13 pounds.

Sunday is the only day in camp when all are sure to be at home for an early dinner and in condition to enjoy and appreciate a good one. On week-days, the cook, who never leaves camp, does not serve dinner until half-past seven P. M., so as to give all time to return from the pools, which are often a few miles distant. If one gets a sulking fish late in the afternoon, he may be detained until long after the dinner-hour, and it is by no means a very rare occurrence to have a fish gaffed by the light of a birch-bark torch.

Canada fishing-laws forbid throwing a fly Saturday evening after six o'clock, but of course must allow killing a fish previously hooked. On Sunday, all are somewhat rested, and appetites are always keener after the day's rest which follows excessively hard work out-of-doors.

LATE TO DINNER.

On Sunday, July 4th, 1875, Mr. Reynolds, sent word that with three friends he would come over and take dinner with us on our glorious Fourth. As his name is a synonym for hospitality, we were quite anxious to show no shortcomings ourselves in that direction. Our six men and the cook were assisted by Curtis himself, who undertook the unheard-of thing of making a loaf of cake on a salmon-stream. How he succeeded is best told by his own letter to his sister, who had given him the cake recipe:

"I used every available dish in camp — spilled the flour all over my clothes and the

floor, and then rubbed it well in with butter, of which latter I melted one less too much and the other too little. Took a vote, and found a majority of one for stirring it with the sun. Think, after all, I stirred it the wrong way; and certainly put in too much egg-shell to make it settle well, for all the plums, currants, citron, etc., nearly settled through the bottom of the small wash-bowl in which I baked it, while some large lumps of sugar failed to get crushed at all. The cake was, however, quite passable. To be sure, I forgot to butter the dish, and had to dig the cake out in small pieces and glue them together; but that was a mere trifle, and my success was greater than could be reasonably expected from so *doughty* a matter. The cow which I had driven up from the settlement and put in our old and now unused snow-house, *so as to keep her*, came to grief by breaking her leg on her way down the steep rocky river-bank to get water."

Our admirable courier came up from the Basin early in the morning with a clean pocket-handkerchief full of lettuce leaves, the size of a silver dollar, which he had procured from the minister's wife, who had raised under a cold frame the only lettuce in the settlement. Coffin complained bitterly of the imposition of the lobster-dealer, who, learning that his purchase was for "States" men, charged him ten cents each for lobsters of about five pounds weight, while he sold them commonly to the packer opposite Gaspé for fifty cents a hundred, large and small as they run. So plentiful are lobsters around Gaspé Basin that a few moments suffice to get a basketful hooked up with a peculiar sort of gaff made expressly for the purpose.

A heavy shower overtook our friends between the two rivers. They had, in honor of the special occasion of a Fourth of July dinner with their American friends, dressed themselves in gorgeous apparel of white flannel. What with the rain which had soaked them and beautifully distributed the usual face dressing of tar and sweet oil over large geographical surfaces, the stains of tree-drippings and the wadings through the marsh at the end of the lake, they presented a sorry appearance. Nothing could induce them to remain and dine in such plight, and so after a little rest and a modest lunch of crackers and cheese, they left us. Our bill of fare, which in accordance with camp custom we had written on bark, was quite elaborate.

On Thursday, we received from our friend Reynolds a kind invitation to occupy the York River for a week. Curtis and

I accepted, Douglass going off by steamer to take a fortnight upon the Matapediac. We packed luggage in long rubber army-bags, and slung them across the back of an apology for a horse sent up from Gaspé, and went directly over the mountains to House No. 1, where we found canoes and extra men awaiting us, and then pushed directly for the Narrows.

"FIFTY CENTS A HUNDRED."

In lifting one of our canoes over a slight fall, we swung her around and half filled her with water, soaking our blankets, boxes of bread and crackers, as well as sweetening the men's black tea with brown sugar *en masse*.

FALLS AT THE NARROWS OF YORK RIVER.

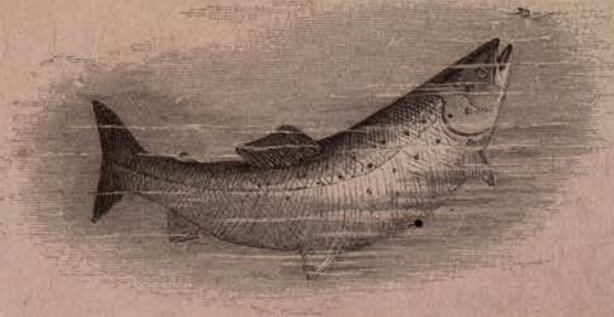
Just below the Narrows canoes cannot be used, but the fishing must be done while standing and wading in from one to two and a half feet of water. Rubber wading-stockings are worn, with very large canvas shoes over them, the soles being studded with soft metal nails to prevent slipping upon the rocks. In a moment of excitement, while following a fish, one frequently gets in over the tops of his stockings, and the subsequent carrying of a few gallons of water in these for-the-time rubber-bottles is neither comfortable nor easy. Curtis improves upon the stockings by a pair of boots and trowsers, such as are used by the Baptist clergy, and which permit wading above the waist. Another of his improvements is a vertically adjustable piano-stool arrangement in his canoe, which, while voyaging, lets one down near the bottom to keep the center of gravity low and prevent capsizing, and which when casting can be turned up for a high seat. This, of course, is only to be used as last indicated when one is lame or very much inclined to laziness.

ONE WAY FISH ARE LOST.

At the pools, some distance below the Narrows, are found numbers of fallen trees, projecting nearly at right angles to the low river-banks. These trees are the occasion, to nearly all anglers, of the loss of a few fish. Poling rapidly under them, while intent upon a running fish, they find their elevated rod within a few inches of the obstruction. On the instant, the rod is thrown forward, and this gives slack line to the fish and enables him to free himself. A second and too late thought tells him, what every one of course knows, that a line from a given point before him on the water to the top of his rod, when held upright, is precisely the same as from the same given point to the top of his rod when it is dropped horizontally in the same vertical plane. Nine times out of ten an inexperienced angler forgets this, and does not quickly throw his rod to the center of the river, as shown in the sketch, and thus preserve his rod and keep a uniform strain upon his fish.

The old log-house at the Narrows is replete with pleasant reminiscences. On the pine doors, cupboards, and window-casings are scores and sketches illustrating amusing incidents of life upon a salmon-stream. Sadly we note the names of one or two who, alas! can never gladden us again with their presence.

Higgs's well-known copy of Bagster's first edition of "Izaak Walton" is bound in wood from the door of Cotton's fishing-house, "*taken off by Mr. Higgs, near the lock, where he was sure Old Izaak must have touched it.*" Following out somewhat this conceit, we made our sketches and notes upon the soft bark of some of the old birches that overlooked our quarters.



THE RISE. FROM THE PAINTING BY WALTER M. BRACKETT.

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